

NEXT ISSUE-DAIRY & LIVESTOCK NUMBER

THE NORTH DAKOTA FARMER

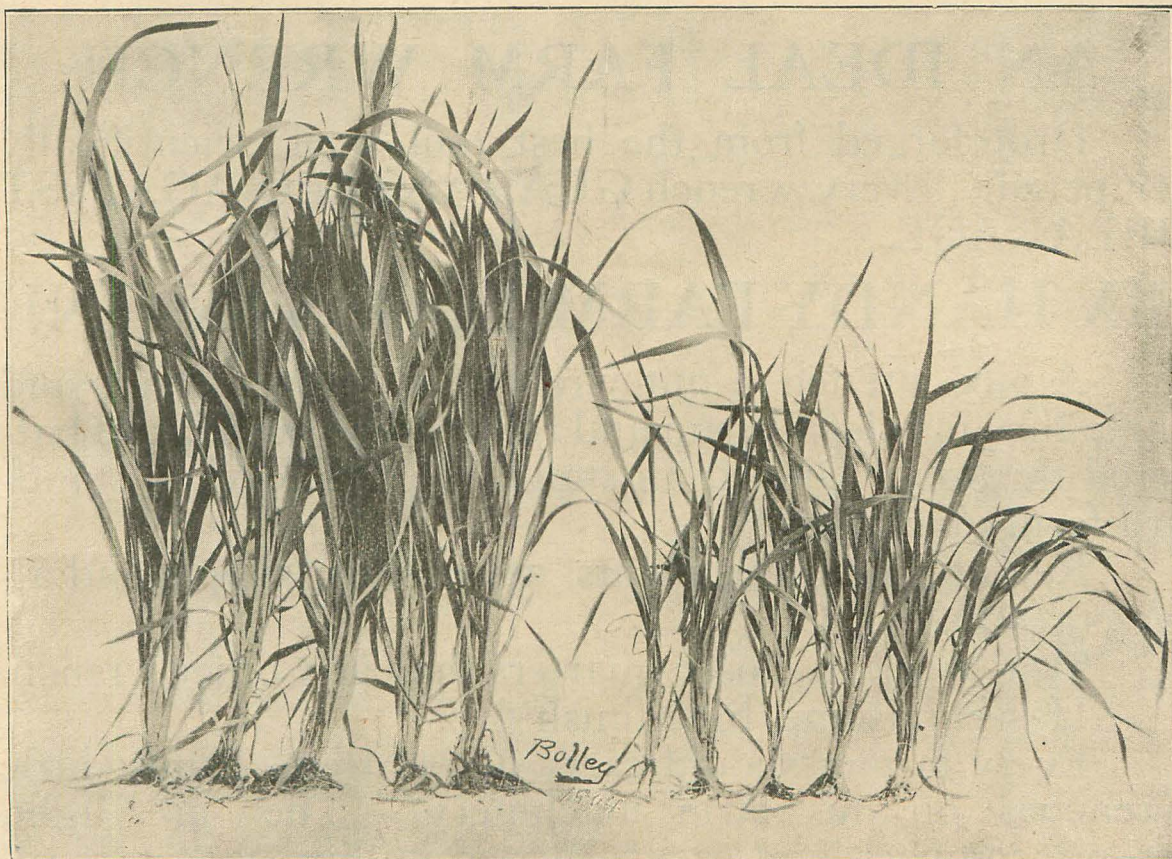


"THE NORTH DAKOTA FARMER FOR NORTH DAKOTA FARMERS"

Vol. 14 No. 9

Lisbon, North Dakota, March 15, 1913

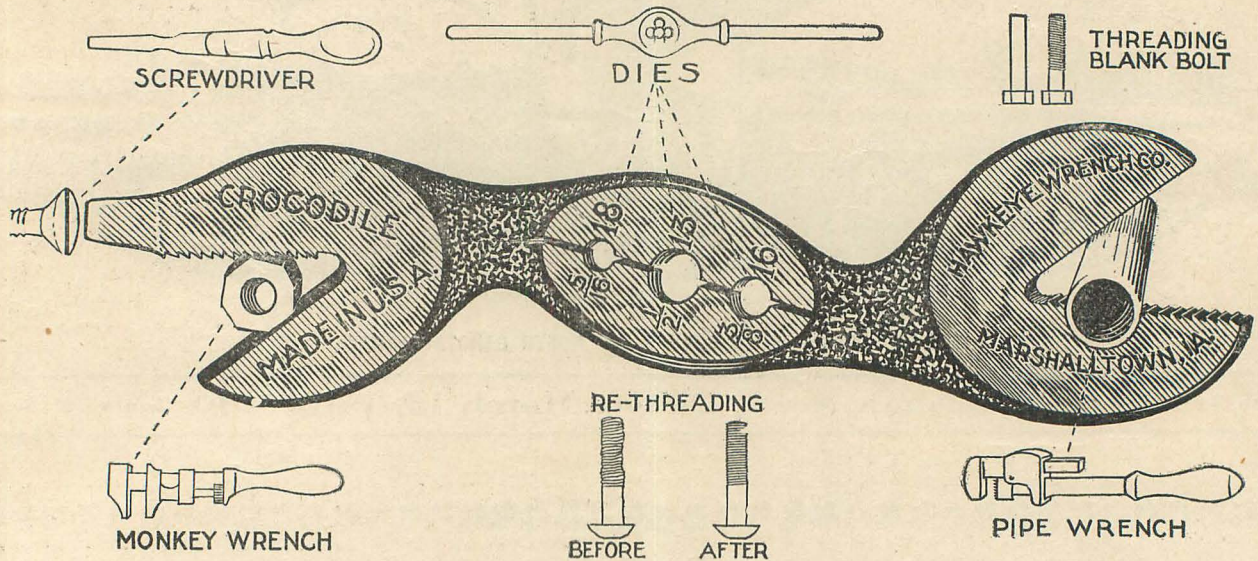
50 Cents A Year



This illustration shows the effect of proper seed treatment for purification of seed. The larger wheat plants were grown from the same seed as the smaller one and were planted in the same soil on the same day. The larger growth was made by properly treated seed. Proper seed treatment not only helps to control smut, but helps to control the root diseases which cause the rotting and decaying of wheat roots in the soil.

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THE NORTH DAKOTA FARMER

SEED & NURSERY NUMBER

Vol. 14, No. 9

LISBON N. D., MARCH 15, 1913

50 Cents a Year

SHELTER BELTS

By President J. H. Worst, N. D. A. C.

THE GREAT PLAINS AREA is an unbalanced country. Its climate is erratic. Terrific downpours of rain often precede and as often follow periods of drought. If the precipitation were more evenly distributed, there would be neither wash-outs nor droughts. Hot winds also occasionally devastate large areas of grain, doing millions of dollars' worth of damage in a few hours' time. The winter blizzards oft-times are severe, while crickets and grasshoppers as well as gophers do tremendous damage in different localities. Add to all these agricultural handicaps the hail storms that, tho local in character, devastate whatever they strike and you have fairly listed the evils that beset different sections of the Great Plains Area, some of them occasionally afflicting our own magnificent commonwealth. But why be pessimistic? Most of these evils are curable and all can be greatly modified.

The wild horse lacked quality; he was too small and besides was a bad-tempered brute. The wild buffalo did not come up to the dairyman's ideal of a cow; neither did the wild boar give promise of that docility necessary for an animal of strictly domestic type. What was the remedy? The bad qualities were bred out of these and other animals and desirable qualities bred into them. It required much time and patience, but brains ultimately triumphed over matter and splendid breeds of horses, cattle, sheep, swine, poultry, etc., are in evidence. The difference in their quality and disposition as compared with their wild ancestors represents the victory that intelligence has won over the blind forces of Nature.

The question now arises why cannot the climatic conditions of a country, under certain conditions, be improved as well as the characteristics of animals? Having succeeded with domestic animals, by the same token we must succeed with other divisions of Nature if we apply equal skill and patience to the problem. What is the remedy? I reply without hesitation—

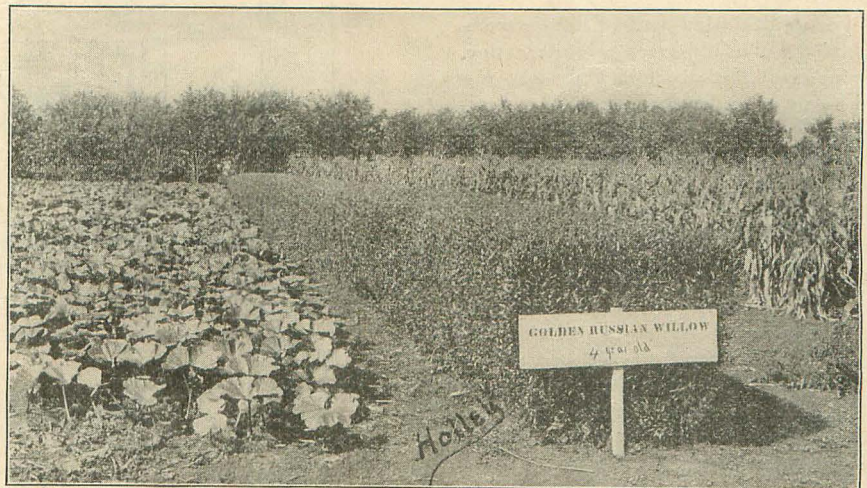
trees. If trees were plentiful there would be no Great Plains Area. By planting trees, therefore, we can eliminate the Great Plains Area, as such, and improve the quality of its climate just as scientific breeding has improved the horse or dog. Why not?

Shelter belts represent the simplest form of improvement and require the least investment of time and money. A single row of trees extending east and west across the state at intervals of one mile would, in my opinion, work material improvement in the climatic conditions of our commonwealth. If planted at intervals of one-

his land to trees and give them as much attention during the first five years as he gives to his potato patch or to his corn field. In fact tree planting and tree cultivation should occupy a big place in the public mind during the next ten years. What a pity they did not occupy a far bigger place in the public mind during the past quarter of a century!

What benefits do trees confer, do you ask? Well, in the first place, trees encourage the more permanent residence of birds on account of the protection they afford and if we had more sensible laws for the protection of birds, especially insect and weed-seed eating birds like the prairie chicken, together with mice and gopher-eating birds, like the owl and hawk, the birds alone would earn a dividend on the ground the trees occupy as well as cost of caring for them.

Secondly, hot winds being compelled to hurdle a mass of green foliage every mile,



The Golden Russian Willow Flourishes in North Dakota

half mile and two rows were planted instead of one, the effect would be still more pronounced, while if the shelter belt idea were carried out over the vast area commonly referred to as the Great Plains Area, the good effects would be correspondingly increased.

In referring to shelter belts, I do not underrate the importance of planting trees in compact bodies for the purpose of providing a future supply of fuel and timber. Every farmer should, in addition to planting shelter belts, plant ten per cent of

to say nothing of tree plantations that should be as numerous as the farms, they would rapidly cool down and lose their teeth. Moreover, the hugging winds that uncover thousands of acres of grain that has been seeded carelessly or unscientifically upon light soils would be greatly interfered with, while weed seeds that blow about the country would more nearly be confined to the farms that produced them and blizzards would be shorn of much of their violence, inasmuch as a mile sweep without interruption would be about all

the straight get-away they would have.

Where trees are wanting, therefore, they should be planted not alone for their effect upon climatic conditions but for their economic value as products of the soil. Shelter belts, on the other hand, are provided chiefly for their influence upon the climate. Presumably, shelter belts after having attained a fair height, extending east and west across the state, and at intervals of one mile from north to south, will exercise a deterrent influence upon certain injurious wind currents that afflict the crops. If planted only half a mile apart, the beneficial influence would be much more apparent. The latter should be the rule where the soil is inclined to blow.

Preparation of Soil

The preparation of the land for planting trees is an important item. The land should be plowed from 12 to 16 inches deep, in the early summer, and planted to corn or potatoes and thoroly cultivated thruout the season. Land summer-fallowed and cultivated at intervals during the summer and fall would doubtless prove still better for the young trees. For wind-breaks, a strip of ground one rod in width should be plowed as above and cultivated frequently during the summer to conserve moisture for the following season and also to destroy weeds. The following spring the trees should be set out and cultivated at frequent intervals every season during the first four or five years.

For an ideal wind-break, I would recommend the elm and green ash, alternating, about eight feet apart in a straight row with grey or golden Russian willows planted between,—say at least two willows between every two trees. This will make a compact wind-break and if damaged by fire, the willows will spring up from the root and renew the windbreak.

Since writing the above, the legislative assembly indefinitely postponed the Calnan Bill (H. B. No. 256); hence there will be nothing in the way of encouragement for planting shelter belts during the next two years. This is certainly most unfortunate. It would seem that constructive legislation of this character in a purely agricultural state,—legislation which would mean so much by way of agricultural improvement for the immediate future and more especially for posterity should receive better consideration on the part of North Dakota statesmen.

I consider this bill in the far-reaching and beneficent effects it would have upon agriculture one of the most important that was ever introduced by a member of the North Dakota Legislative Assembly. It is certainly unfortunate that measures of this character must be subordinated to so much that seems to be of comparatively trifling importance.

WHERE TO PLANT TREES

Norman M. Ross, Chief of Tree Planting Division, Canada

On the prairies the most protection is needed from the north and west, as the prevailing winds come chiefly from these directions. The principal belt, then, should be on these exposed sides; four or five rows on the east and south will be found quite sufficient. There seems to be a strong tendency for those planting trees on prairie farms to crowd them too close to the buildings. This is a great mistake, as they will collect large banks of snow in the winter time, which will prove a great nuisance, and perhaps cause extra labor in digging out paths and roadways. Then, too, plenty of room should be allowed for,

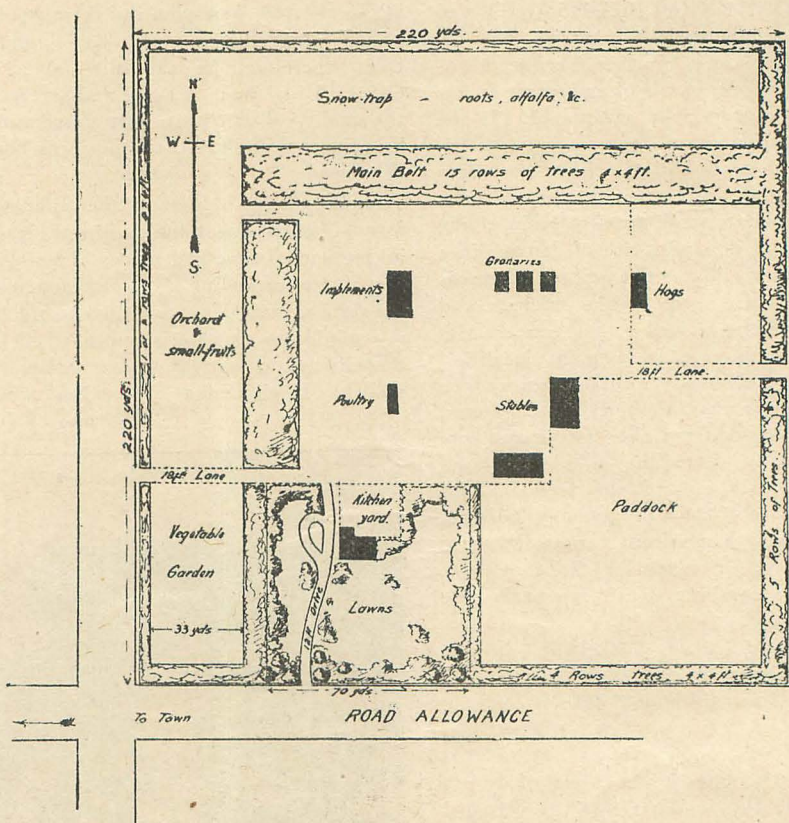
attain any size, but always remain stunted and bushy. The land kept for a snow trap need not be wasted, but would answer splendidly for a garden or root ground.

BROME GRASS

L. R. Waldron, Supt. Dickinson Sub-Station, North Dakota

Valuable as are the legumes, both in their relation to the soil and to the animals which feed upon them, it is well to supplement their use by the growth and use of some of the small grasses.

While many kinds of grasses can be grown in North Dakota and many of them with a lesser or greater degree of



Plan for an Ideal Homestead.

in case it may be wished to extend the buildings at some later date. There is nothing so inconvenient as a cramped barnyard. In making a shelter belt, if it is to be more than a rod or a rod and a half wide, an extra row of willows, cottonwood, or maple should be planted outside this at a distance from the main belt of three or four rods, the space between to be left free from trees. This space is to act as a snow trap in which the snow, drifting thru the single row, will be caught. If the snow was not held in this way it would lodge in the center of the belt, and would be liable to break down the tops of the small trees. This is likely to occur year after year, practically destroying the trees which in all probability would never

success, experience and experimental work have gone far enough so that we are definitely able to recommend this sort.

Brome grass has been grown quite extensively in the state for many years. Unfortunately it has not found the general favor among the farmers of the state as was once hoped for it.

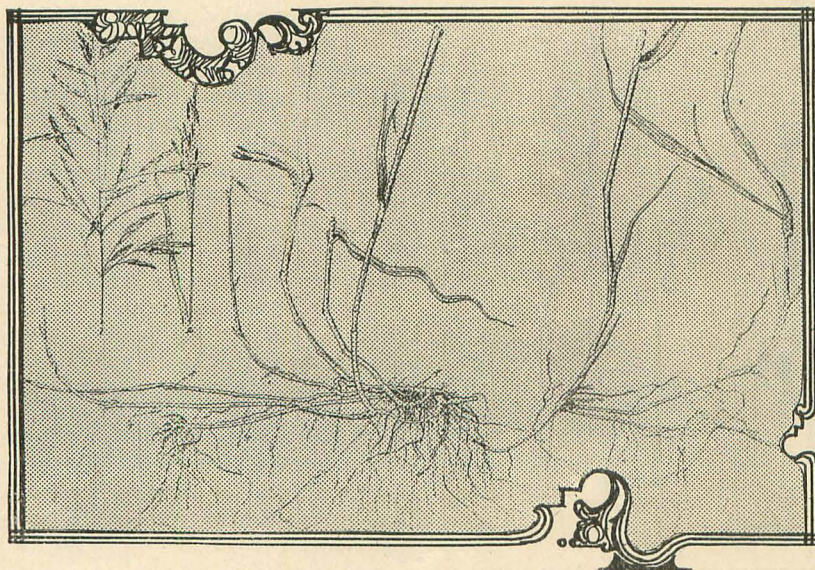
Two common complaints are lodged against brome grass. These are: First, it does not produce a good quality of hay, i. e., it is not palatable, and, second, it does not yield crops large enough to be paying.

In regard to the first of these contentions, it may be said that brome grass hay is actually as good as timothy hay and as far as richness goes, perhaps even better

Why then, is there this disagreement? No doubt the main trouble with those that object to the quality of brome grass hay lies in the time of cutting. Native prairie hay can be cut along in July without much injury to its quality. Not so with brome grass. It should be cut when the heads are in the early purple, at or just before the time of blossoming. If allowed to go beyond this stage, the hay is of poor quality, but the grass is not to blame.

Its Good Qualities

Brome grass seed is not expensive; the stand is quite easily secured; it furnishes a pasture grass probably unequaled by any other plant that can be grown in North Dakota, surpassing in many points even the native grasses; and finally it furnishes a hay of good quality; equal to timothy in palatability and surpassing timothy somewhat in richness.



"We Are Definitely Able to Recommend Brome Grass."

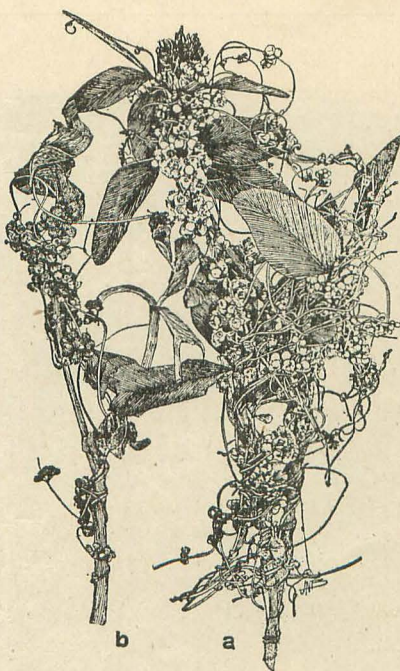
In regard to the second point, the poor yield of the grass, this seems to be true to a certain extent. The yield may be good for the second and third year after seeding, but from then on it drops rapidly and fails to be profitable. This decreased yield, in the drier portions of the state, may be ascribed in part to an absolute lack of moisture and in part also to other causes, not well understood.

It does not seem as if brome grass makes full use of the moisture it receives on soils of medium or of poor fertility.

When the brome grass yields have become poor, the crop may be renovated by severe discing, or perhaps more preferably by plowing. After sod-bound brome grass is plowed, one may expect it to come on with renewed vigor, and especially is this true if barnyard manure can be applied to the field. In plowing, rather narrow, shallow furrows should be turned, and they should overlap somewhat. The plowing should be done when the soil is moist and the plowed ground should be worked down as level as possible.

Before mentioning the good qualities of brome grass, permit me to state two more of its faults. It does not seed well from an ordinary drill. Seeding must be done by hand or broadcast by a special wheelbarrow seeder. It does not kill out readily when once established and this becomes more emphatically true upon those soils best adapted to its growth.

DODDER
The dodder or "love vines" (*Cuscuta* Spp.) are among the worst weeds with which the alfalfa plant must contend. The dodder seed is often introduced into



the alfalfa field with the original seeding. The seed of the large-seeded dodder is so nearly the same size as the alfalfa seed

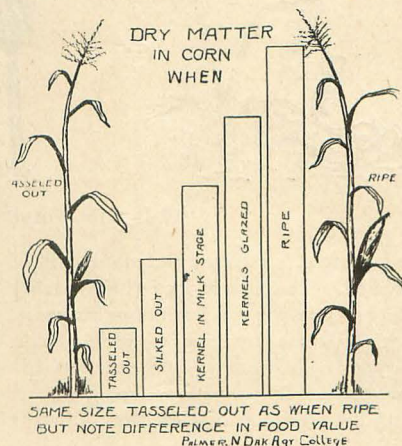
that it is almost impossible to screen it all out, even with the most carefully constructed sieves. The dodder plant itself is a yellow threadlike vine which attaches itself to the alfalfa plant.

It often destroys the seed-producing capacity of the plant which it attacks and matures its seed so as to be harvested with the alfalfa seed.

RIPE CORN HAS MOST FOOD VALUE

Prof. W. C. Palmer

The food value in the corn plant increases fast from the time it is tasseled out till ripe. The corn plant has its full size when tasseled out, the change comes on the inside, which is filled up with food material. Prof. E. F. Ladd has found that there is as much dry matter in an acre of corn when ripe as in five acres when fully tasseled out. When glazed there is as



much dry matter in one acre as in four acres when just fully tasseled out. From this it is easy to see that if the corn is cut too early all one gets is the frame work and not the food material.

The surest way to get ripe corn is to plant home grown seed. If an early maturing variety of corn is grown in the South it loses its early maturity. The seed corn should be selected in the field and dried in a room with some stove heat. Home grown seed, selected and cured in this way, will produce corn that ripens, which means corn with the greatest food value.

FLAX

Flax is one of the crops that North Dakota leads in. It is one of the most profitable crops. The keeping of the flax crop depends on putting into practice the best that we know regarding the enemies of the flax crop.

Its worst enemy is the flax wilt. This can be kept in control by selecting good seed, by treating the seed and by rotation

of crops. The flax wilt is a fungous disease. It grows in the flax plant, using the sap of the plant as its food. It reproduces spores. These are so small that they can only be seen by the aid of a microscope. They are large enough tho to start a plant. These spores live on the soil for several years. If flax is planted on

with formaldehyde most of the spores are eliminated and killed.

A wilt resistant flax has also been developed. This disease does not have much effect on this flax, yet even when this is grown it is best to observe the above precautions of eliminating the disease.



"Wilt the Worst Enemy of Flax."

the land that is infected the plants will be attacked. The spores lose their vitality after being in the soil for five or six years. That is where rotation of crops helps. The spores also abound on the seed and in flax straw. By selecting the plumpest seed, by cleaning it and then treating

PRESIDENT WILSON COULDN'T have been elected without most enthusiastic support; neither is it possible to have a state farm paper unless every subscriber takes a personal interest. If you like this issue, tell your neighbor, if you don't, tell the publisher. Watch your address label.

RED CLOVER A FAILURE?

Many have had the Same Experience
J. G. Haney, I. H. C. Service Bureau

In conversation with a young farmer from near Argusville, N. D., the subject of various crops was under discussion. I asked if he had tried red clover. He said they sowed about 40 acres one year and got a good stand. The following year they harvested over 7 bushels of seed per acre, but the next winter it all killed out so they had never tried it any more.

It is very common for this experience to be met with in the northwest. The seven bushels of seed per acre was certainly an extraordinary crop. Such a crop this year would just about buy the land twice, as clover seed is quoted about 20 cents per pound. It is somewhat surprising that farmers will condemn so valuable a crop to the extent of not trying it again after it had done so well as in this case. It is also remarkable that there are so many who do not realize the fact that red clover belongs to the biennial class of plants. This class of plants never do grow more than two years. Undoubtedly the reason for many not knowing this to be true of red clover is because in their previous experiences, it has been able to reseed itself to such an extent that it appeared to live on from year to year.

Red clover is certainly one of the most valuable legumes, and is particularly well adapted to the conditions in North Dakota. It is hardly to be expected that it will ever become as universally successful as it is in the central regions of the United States, but it is doubtful if any



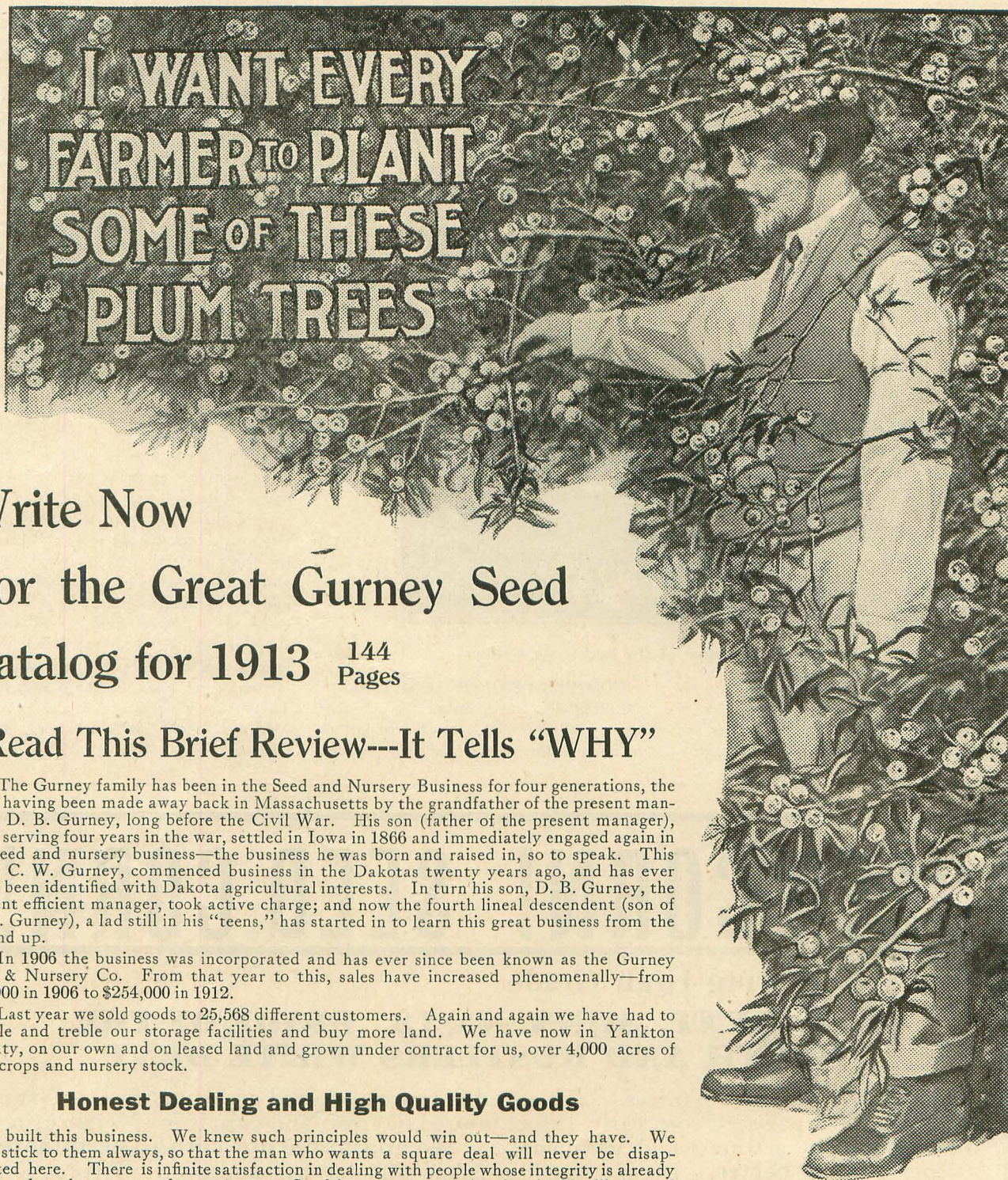
Photograph showing a field of resistant flax grown from seed developed by the Botanical Department of the North Dakota Agricultural College, known as NDR52. This crop was grown by Henry Bemis, Finley, N. D., year 1908. Notice how the common flax died out in the foreground,—the effect of flax sick soil.

other legume will ever be found that will be as successful in North Dakota as red clover or alfalfa. It is the most valuable plant grown in short rotations for the purpose of securing nitrogen from the air and for fitting land for producing better crops.

Nitrogen is one of the essential elements of fertility and one which, in nearly every case when added to the soil, will produce increased yield, especially when it is added to the soil by such a plant as clover.

In one instance a farmer told me that he

doubled the yield of his potato crop by plowing under one crop of clover. Where a crop of hay is desirable, this could be cut off the second year, or if conditions were favorable, in many cases a profitable seed crop could be obtained. Of course



Write Now For the Great Gurney Seed Catalog for 1913 144 Pages

Read This Brief Review---It Tells "WHY"

The Gurney family has been in the Seed and Nursery Business for four generations, the start having been made away back in Massachusetts by the grandfather of the present manager, D. B. Gurney, long before the Civil War. His son (father of the present manager), after serving four years in the war, settled in Iowa in 1866 and immediately engaged again in the seed and nursery business—the business he was born and raised in, so to speak. This man, C. W. Gurney, commenced business in the Dakotas twenty years ago, and has ever since been identified with Dakota agricultural interests. In turn his son, D. B. Gurney, the present efficient manager, took active charge; and now the fourth lineal descendent (son of D. B. Gurney), a lad still in his "teens," has started in to learn this great business from the ground up.

In 1906 the business was incorporated and has ever since been known as the Gurney Seed & Nursery Co. From that year to this, sales have increased phenomenally—from \$20,000 in 1906 to \$254,000 in 1912.

Last year we sold goods to 25,568 different customers. Again and again we have had to double and treble our storage facilities and buy more land. We have now in Yankton County, on our own and on leased land and grown under contract for us, over 4,000 acres of seed crops and nursery stock.

Honest Dealing and High Quality Goods

have built this business. We knew such principles would win out—and they have. We shall stick to them always, so that the man who wants a square deal will never be disappointed here. There is infinite satisfaction in dealing with people whose integrity is already proven thru the passage of many years. Send in your name today for the big illustrated 1913 catalog. It is bigger and better than ever—144 pages. FREE.

Gurney Seed & Nursery Co.

Box 11, Yankton, S. D.

Our Guarantee:

We guarantee seed corn or other seed sent out by us to test to the satisfaction of the purchaser. That is, test it on its arrival and if not satisfactory return it to us at our expense and the money paid together with the transportation charges will be refunded to the purchaser.

Prof N-E-HANSEN

where a hay crop or seed crop is removed, it would not be reasonable to expect the soil to be benefited to the same extent as if the entire crop was plowed under.

The advent of winter rye as a crop makes it possible to use red clover with splendid success. The rye of course is seeded in the fall. In the spring the red clover should be put in on the rye with a grain drill, drilling the clover cross-ways of the rye drills. This rye crop matures early and allows the clover to make a

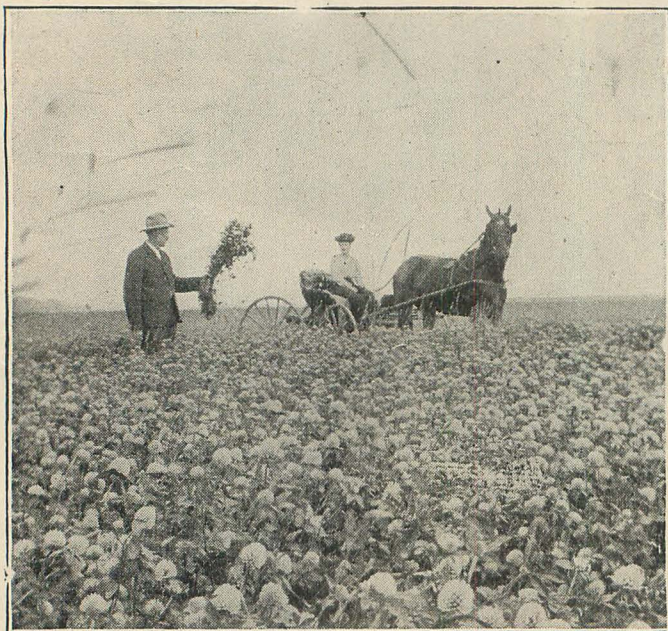
ducing only 10 to 15 bu. per acre) and if the clover is allowed to grow the second year and turned under early in the summer that the succeeding wheat crop will almost double the former yield, and the effects of this one crop of clover would be noticed for several years. In case the land is very foul with noxious weeds, it of course would be advisable to precede the clover with a crop of corn, which would clean the ground.

of organization and operation of cow testing associations is outlined. Detailed information is given as to the organization of the co-operative creamery including articles of incorporation and by-laws. A brief description is given of creamery plans, and ice houses with illustrations of many details of construction.

HARDY GRAPES FOR THE NORTHWEST

Wm. Pfaender, Jr. of New Ulm, Minn. writes: It may be of interest to many of your readers to know, that we now have grapes in Minnesota that can be successfully grown without winter protection. The standard varieties, such as Concord, Moores Early and others can be grown in Minnesota, but a fair crop can only be expected if they are well protected during winter. Since several years, however, we have a quartette of grapes all of the same parentage—being a cross of our native white grapes (*Vitis vulpina*) and the Concord—that are perfectly hardy in our severe winters where the thermometer often drops to 20 and 30 degrees below zero.

The wild white grape used as a foundation was very sweet, a late bloomer and matured its fruit very early, which is also true of the cross above mentioned. The vines drop their foliage early and ripen up the wood perfectly, are vigorous growers, and annual bearers of a good-sized bunch and berries nearly as large as those of the Concord. They produce a red wine of superior quality. I am certain that these grapes can be successfully grown much farther north than southern Minnesota. They are now being tested near Winnipeg Manitoba, and Indian Head, Sask., Canada.



A Clover Enthusiast of the Red River Valley

heavy growth in the fall. There is no doubt but that if a good catch of clover is secured on the ordinary wheat lands of the Red River Valley, (which are now pro-

CO-OPERATION IN DAIRYING
Bulletin 102 North Dakota Experiment Station takes up cow testing associations and co-operative creameries. The method

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Seed Corn at reasonable prices. This seed is grown, selected and cured by ourselves. We select our seed corn early, before injured by frost, and cure it in special curing houses, thereby getting a high germination. **We guarantee our corn to germinate 90 per cent or better.** Recent tests have shown 95 per cent and over. Satisfaction guaranteed both as to price and quality of seed.

Write for prices and further particulars at once to

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DASSEL, MINNESOTA

GRADING AND TESTING SEED CORN

By C. P. Hartley of U. S. Bureau of
Agriculture

Take time by the forelock and get the seed corn and the corn planter ready for operation now before the rush of the other spring work. The soil and the seed are two prime requisites of a profitable corn crop. At this time of the year there are many days when weather or soil conditions prevent plowing or other field work, that can profitably be used in improving the quality of the seed corn. The seed supply can be improved in quality and productiveness by discarding the poor ears and the poor kernels.

Cull Out the Objectionable Ears Before Testing or Shelling.

The best time to grade seed corn is before shelling. The office of corn investigations of the United States department of agriculture proved by careful experiments that an ear having kernels or undesirable shapes produces ears most of which have kernels of undesirable shapes. All ears that are undesirable for one reason or another should be discarded before making germination tests.

Good Care Obviates Much Germination Testing.

At this season for several years past a number of satisfactory means have been described for testing the germination of a few kernels from each seed ear. Those who have neglected to take good care of their seed corn may now find "deaf" ears among their supply. In such cases it will be profitable to test the germination of each ear separately. Where well adapted varieties are grown that properly mature before frost, poor germination has never been found among ears selected as soon as mature and cared for properly. Those who have given their seed proper care should pick out 100 representative ears and make a germination test of ten grains from each ear. If these ears germinate well it is not necessary to test the balance of the seed supply.

Why Nub the Seed Ears?

Before shelling the small kernels should be discarded from an inch or more off the tips of the ears. Accurate field tests have proved these small kernels to be less productive than the fully developed kernels of the same ears. The thick, irregularly shaped kernels should also be discarded from the butts of the ears. These kernels produce satisfactorily but

their size or shape prevents the corn planter from dropping them satisfactorily. It is convenient to nub the entire supply of ears before the shelling process is begun.

How to Shell Seed Corn

Many farmers who plant twenty or forty acres of corn, carefully shell their seed by hand and are profited by so doing. A few remarkably successful extensive corn growers shell hundreds of bushels by hand. Where much seed is required there is a strong temptation to run it thru the corn sheller. Hand shelling is profitable for the small farmer and therefore more

Seed Corn Guaranteed

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MINNESOTA 13

Best Corn for the Northwest.
Carefully selected and graded.

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SEED CORN FOR SALE 300 Bushels of Northwestern Dent, and Ransom County Yellow Dent. Grown and Matured here in Ransom County. The kind you must plant, if you want to get Ripe Corn. Address

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NORTH
DAKOTA
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SEED CORN

KILN DRIED,
SELECTED
AND TESTED

The best Seed corn we have ever offered. It pays to plant the best and that is what you get when you buy from us. Order today—the supply is limited. We have a good stock of very high grade Canadian Marquis Wheat.

Alfalfa, Clover, Timothy and grass seeds are cheaper this year, and our stock is of the very highest test and will prove their worth when harvest time comes. Your order should not be delayed if you want good seed. Send today for our 1913 catalog, free

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Dealers in strictly
high-grade seeds.

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NORTH DAKOTA

SEED CORN

North Dakota and Northern
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MILLET - GRASS SEED

Seed Potatoes

We want to buy Brome Grass, Beardless Barley and good Seed Oats. Also car-load of Broom Corn Millet. Send samples and quote price wanted.

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"The Red River Valley Seed House"

Seed Corn---Minn. 13

Earliest ripe, selected since four years,
from early maturing stock. Selected on
cob or shelled \$3.50 per Bu., Test over 90%

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Guide

Pioneer Nursery - New Ulm, Minn.

profitable, for the extensive farmer. The sheller breaks or cracks some of the kernels and there is not the opportunity of examining kernels from different portions of each ear as in shelling by hand. After being nubbbed the proper way to shell the seed ears is to shell by hand, one ear at a time, into a sieve that will let the chaff fall thru and leave all the kernels from the ear in plain view for inspection. If unsatisfactory, all the kernels can be easily discarded and another ear shelled. The ears should not be shelled directly into the general seed supply for it would be difficult to separate and discard the undesirable kernels.

Does Your Planter Drop Satisfactorily?

If the corn planter gave trouble last spring, better order a new one now. A poor corn planter is an expensive implement to use. Even tho the planter dropped satisfactorily last year, it should be tested with this year's seed supply before planting time arrives. The kernels of a variety of corn frequently vary in size from season to season and different plates may be needed this year from those used satisfactorily last year.

Under unfavorable field conditions 10 or 20 per cent of the kernels or young stalks are destroyed. Where extensive plantings are made with first class seed and thinning is impracticable about five kernels should be planted for every four stalks desired. Where help is obtainable that will attend properly to the thinning, it is more profitable to plant twice as many kernels as stalks desired and thin out the weak plants as soon as they become too large and hard to be destroyed by cutworms.

BOUNTY FOR TREE PLANTING

One of the North Dakota laws provides a bounty of \$3.00 per acre for a grove of ten acres. Anyone who plants and cares

for a grove with trees not more than 8 feet apart each way is entitled to a reduction in the taxes of \$3.00 an acre. The limit is ten acres. This makes the growing of a

grove a profitable thing. The trees will bring as much profit per acre as a farm crop, but the returns do not come for some time. With the bounty the returns begin

Your Money Back If My Gopher Poison Doesn't Kill Gophers—for Less Than 1c Per Acre



I do not claim—I do not promise—I absolutely and unreservedly guarantee that Mickelson's Kill-Em-Quick Gopher Poison is the surest, quickest and cheapest method in the world for killing gophers.

It is the only gopher poison in the world that does what it is supposed to do. It is the only gopher poison that is guaranteed to do what is claimed for it. It is the only gopher poison that you can buy with absolute assurance that it will kill the gophers—kill them quick and sure.

You take no risk when you buy Kill-Em-Quick. The actual proofs of what others have done and the guarantee that goes with every box makes you sure that Kill-Em-Quick will either do the work claimed for it or your money will be refunded.



Mickelson's Kill-Em-Quick

It is the result of a ten years study of the habits, likes, tastes and haunts of gophers. Out on the farms I have watched them and the effect that various poisons had on them. It took me a long time to finally discover the combination that I am now offering you.

Kill-Em-Quick is different from anything else ever prepared to poison gophers with. It is attractive to their sense of smell and it tastes so good that they eat it greedily.

Once they get it into their mouths, they are sure to swallow it, and it is so powerful that the smallest particle causes instant death. It is easy to mix and easy to use. Simply soak the grain in water over night, then drain water off and mix with Kill-Em-Quick. Mix it with wheat, oats, oatmeal, corn, shorts or bran. For immediate use, soak grain in hot water for ten minutes and mix as above.

All old fashioned poisons are hard to mix, are distasteful to gophers and are applied in such a weakened state that they cannot possibly accomplish their purpose. The gophers do not eat enough of it to hurt them.

Get Kill-Em-Quick from your druggist at once. Sold only in sealed boxes, with guarantee on each box. Prices, 75c and \$1.25. Sent direct on receipt of price, prepaid if your druggist has none.

Get This Coin Purse Free

The handiest coin purse you ever saw. Free with the coupons found in each package of Kill-Em-Quick. One in every package. Send two from packages and coupon printed in this ad, and I will send the coin purse free. Anton Mickelson, Pres.

MICKELSON-SHAPIRO CO.
1429 Washington Ave. N., Minneapolis, Minn.

Free Coin Purse

This coupon and two coupons from Mickelson's Kill-Em-Quick entitles you to one leather coin purse free. Send no money—just this coupon and two coupons from Kill-Em-Quick packages.

MICKELSON-SHAPIRO CO.
1429 Washington Ave. N., Minneapolis, Minn.

INCORPORATED
1901

Towers' System of Surface Culture

SALES
14348
1912

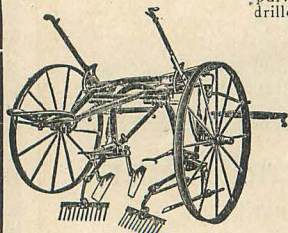
HOW I RAISED MY PRIZE CORN.

"Many things are to be considered in successfully growing corn from even an acre of land. Good seed, I think, is to be considered first. Early I selected and tested my seed, using Yankee Yellow Dent, as we had home grown seed which ripens in this country. I chose large, rough ears with deep-even kernels, straight rows, well filled, tips of good color. I used the 'single ear' test, at least two kernels from each, taken from different sides of the ear with no butt or tip kernels. I had a perfect test. The kernels were quite even. I selected for my seed bed my acre of what is known as midland, light, loose, sandy soil, well drained. Last year it had been sowed to rye and pastured by hogs. For fertilizer I turned under about eight inches, six loads of barnyard manure after spreading it evenly. After plowing it about the first of May pulverized it thoroughly, then harrowed it twice before planting (on May 14th). The corn was drilled with a corn planter, one kernel every 12 inches, and covered with two inches of loose soil; ground was then harrowed to keep weeds down while the corn sprouted. In five days corn came up and was first plowed May 24th. All Cultivation was done with the J. D. TOWER SURFACE CULTIVATOR—six times in all—May 24th; June 7th, 14th, 20th and 29th. It cared well and was quite hard and was not hurt in the least by the first killing frost, September 15th. When thoroughly ripe and dry, October 21st, it was husked, yielding 102 Bushels and 58 lbs.

CHESTER YARNELL, St. James, Minn. December 14th, 1912.

Mr. Farmer: Your cultivator should bear our name "TOWER" on the tongue. Write Us for Our Free Literature.

J. D. TOWER & SONS CO.
68th STREET MENDOTA, ILL.



(Cultivator)



ONE RIGHT WAY

at once. There will also be the indirect benefit. This grove is along the South side of a field and will have an influence on the yield thru lessening the effects of hot winds. This is a good law from the standpoint of the county and state too, as the planting of trees will have an appreciable affect on winds and especially when the tree planting becomes quite general. Every farmer ought to put out a grove. There is no one thing that will do so much to improve the praries.

MONEY IN BEANS

High Prices Justify American Farmers in Turning Their Attention to This Special Crop, Heavy Importation at Good Profit for European Growers in 1913 Proves We are Still Over-looking Great Possibilities at Home.

Why do we import annually such a vast quantity of Beans to supply the home demand?

Why do our farmers allow the ports of New York and New Orleans to be crowded with Beans from the countries of Southern Europe and almost every other part of the world?

Why haven't they waked up to the abundant profit from easy crops of beans raised at home?

The answer is, **they have.** Farmers all over the country are being roused more and more to the importance of this hardy, nourishing vegetable, its importance as a staple article of diet—wholesome and nourishing—and its value to the farmer as a safe and profitable crop.

But there is still an overwhelming demand with which home production has not coped. And with beans passing the \$2.50 per bushel mark, it behooves every thinking farmer to consider seriously whether or not he will share in these profits by growing Beans on a good, big scale in 1913.

A fair idea of the possibilities in the total yield may be seen in the figures representing an output of only the three states of Michigan, New York and Wisconsin. The Bean yield for 1912 in these **three states alone** amounted to 20,000 carloads, each having a capacity of 40,000 pounds, which means **eight hundred million** pounds of Beans.

And not only in these wonder-working states, but almost anywhere in the Union, Beans of one variety or another can be grown profitably.

FIFTY POSTCARDS FREE

With a year's subscription to THE DIGEST, 50 cts. Monthly. Trial, 3 mos., 15 cards, 15 cts. Sample free.
JOS. O. BERG HENDRUM, MINN.

Young man, would you accept and wear a fine tailor-made suit just for showing it to your friends? Or a Slip-on Raincoat Free? Could you use \$5 a day for a little spare time? Perhaps we can offer you a steady job? Write at once and get beautiful samples, styles and this wonderful offer.
Banner Tailoring Company, Dept. 196, Chicago

\$1 SNAPS IN FRUIT TREES

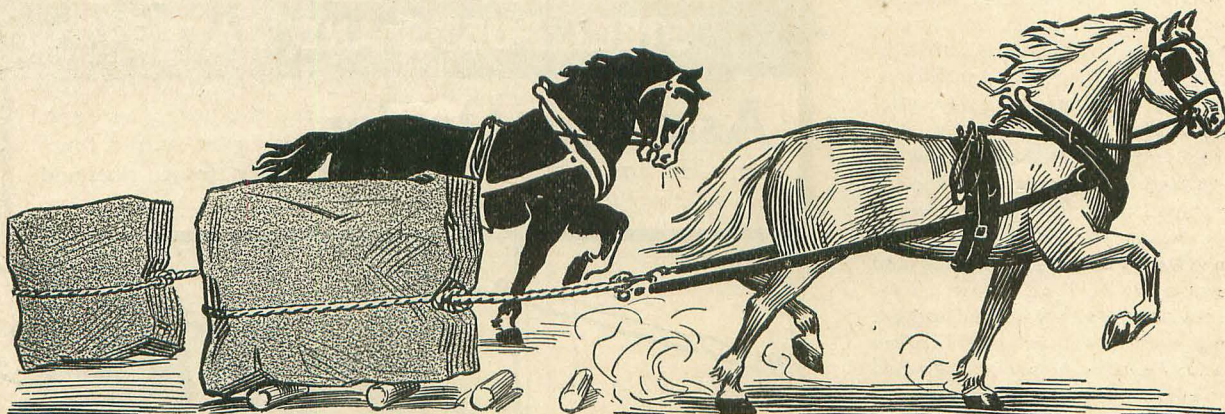
12 Budded Cherry Trees \$1
16 Grafted Apple Trees \$1
40 Concord Grape Vines \$1

We raise hardy varieties for the north and northwest. Our catalog tells you how to plant and care for trees. It is free for the asking.

BENSON OMAHA NURSERY
Dept. 9 Benson, Nebraska

WANTED A MAN

in your town to sell our prairie grown trees and fruits. Salaries paid weekly. People want our trees because they can stand the drying winds, short seasons and cold winters. Write at once for particulars.



Why Roller Bearings are Best

You know how much easier it is to draw a stone on rollers than to drag it along the ground. You have seen houses moved on rollers many times. Our mechanical engineers have applied the same principle to wagon building. They have invented and perfected an improved roller bearing with specially hardened steel bushing, for farm wagons, that runs $\frac{1}{2}$ to $\frac{1}{3}$ easier than the ordinary frictional sliding bearings. This invention has revolutionized farm wagon construction, and every wagon will soon have roller bearings. Official tests of Road Experts of U. S. Department of Agriculture show remarkable results.

Peter Schuttler Roller Bearing Wagons

Do One-third More Work and Do It Easier

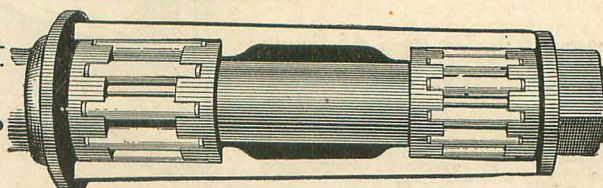
because the roller bearings run so much lighter and require less power to pull the load. They save time—money—horses—harness—feed—repair bills—greasing—trouble, and wear on the wagon. They are much easier on the horses, and soon pay for themselves by economy of operation.

The Schuttler Roller Bearing Wagon is not an "all steel" wagon with steel wheels—but the "Old Reliable" Peter Schuttler Quality Wagon—the "One Best"—with standard wood wheels, steel axles, and our latest and greatest improvement—the Schuttler Patented Roller Bearing.

Write For Our Free Book

which explains the improved Schuttler Roller Bearing construction and gives records of official tests by United States Government.

PETER SCHUTTLE CO.
2524 West 22nd Street Chicago
The World's Greatest Wagon Factory
Established 1843



It has been shown that they will mature successfully in all Northern latitudes and many of the Southern states have made excellent showing in the way of good Bean production.

More people are eating Beans. It is no longer the laboring classes—those who are forced to economize who select Beans as an article of steady diet. People are learning the remarkable nutriment of well cooked beans.

American canners by vigorous exploitation have created a new demand for Beans. They have brought people to a knowledge of the delicious **flavor** of beans when rightly prepared, as well as their rich food value. And, because of the trade they have thus built up, these industries consume annually quantities of beans so vast that they are almost unbelievable.

The market page, with its reports of high and steadily increasing prices is proving a decided encouragement to the farmer—is opening his eyes to the really tremendous possibilities in bean culture.

It is not necessary for him to specialize on fancy varieties.

Simple white "navy" beans are gaining in popular favor at an extraordinary rate. They will grow in almost any soil. Wherever wheat and corn will grow—you can raise beans. From Maine to Florida every degree of latitude seems to suit this adaptable crop. In all the North Central states these Beans will thrive, and hundreds of thousands of bushels are raised in Illinois, Indiana, Iowa, Minnesota, Wisconsin, Ohio and Pennsylvania.

It is only recently that the world has begun to realize fully how much of the profits and prosperity of our Northern states is based on the simple white Bean!

Farmers have learned, too, that old land is better than new for Bean culture. That an inverted clover bed brings a full harvest. And that when grown in rows between clover and wheat, Beans not only flourish of themselves, but fill the ground with nitrates.

For planting time there are no set rules, only the common sense advice based on the fact that the Bean seed needs warm ground. When once this is understood, the wise farmer bides his time independent of rule or date. The most successful Bean growers of the Northern states recommend planting about the middle of June. Experts agree that the plowing should be at least 6 inches deep.

Since demand regulates supply, it is safe to predict for 1913 a far more general growth of enthusiasm among farmers that will keep pace with the way Beans are

growing in popularity and favor with every one.

From every point of view there is wisdom in the old saying about the man who "knows beans." Everybody ought to know them—from the consumer whose bone and tissue, brain and muscle are all enriched and improved by a diet of good old fashioned Beans, to the farmer who in Beans has an opportunity of raising a safe and heavy crop and of finding a ready market, at top prices.

COUNTRY ROADS OF CONCRETE Inexpensive in First Cost and Maintenance

No single factor plays such an important part in the social and business life of a community as the quality of its roads. Aside from the pleasure and convenience of travel, possible at all times over permanent roads, there is the financial phase which directly concerns the cost not only of farm produce but of city products as well. Consequently everybody wants



AMERICAN
ORIGINAL AND
GENUINE **FENCE**
STEEL POSTS AND GATES

Ask Your Dealer for this better, stronger, heavier galvanized fencing. He buys in large quantities, secures lowest freight rates and can sell to you cheaper than anyone else.

LARGE WIRES

The Life of a Fence is in the Bigness of the Wires

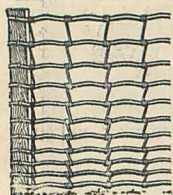
American Steel Fence Posts Cheaper than Wood and More Durable. Get Catalog.

Two Great Books Free

"Making The Farm Pay"—a simple and short treatise on farming, covering the things every farmer and his boy should know—sent free on request.

"The Making of Steel"—a complete account, simply and clearly presented, with many illustrations. This subject never before presented in so concise a manner. Every farmer and his boy should read this. Sent free on request.

FRANK BAACKES,
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Heavy Close 49 in. Fence 24c Per Rod

Steel Farm Gates \$2.95 and up. Galvanized Barb Wire, \$1.55 per spool. Our large catalogue of fences for every purpose, gates, fence tools and supplies with low direct from factory prices sent free to any address.

THE MASON FENCE CO.
Box 81 Leesburg, Ohio

good roads. In the matter of paying for permanent highways, a generally satisfactory agreement seems to have been reached in the proposed distribution of the cost between the nation, the state, the county and the users of the road in question. As a result, within a few years this country will take its rightful leading position among the nations of the world in the number of miles of permanent roads.

Changed Conditions Require Permanent Material

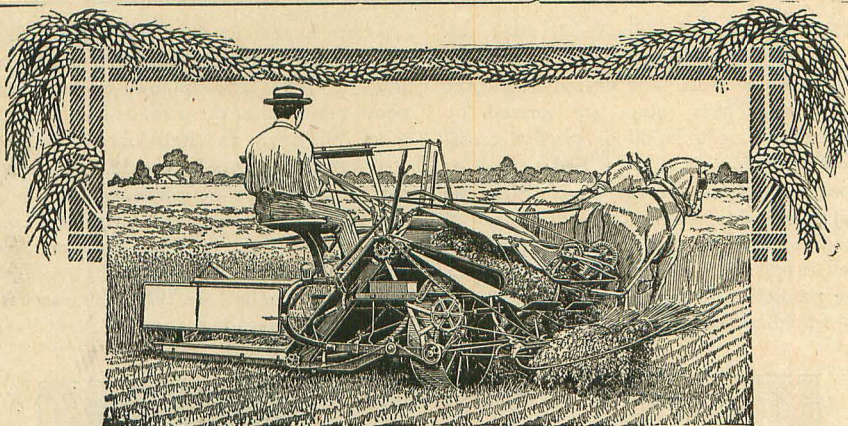
In a way it is fortunate that the United States has been rather slow in the matter of road-making. The roads can now be built of lasting materials such as will withstand the wear of motor traffic, which is fast ruining Europe's century-old roadways. Lasting road materials are everywhere present in the form of sand and gravel from pits and stream beds and crushed rock from stone quarries. Combined with Portland cement into concrete, they form an inexpensive and permanent road surface which successfully resists the usually destructive action of automobiles.

Inexpensive Local Materials Often Usable

The first consideration in the building of concrete roads is a careful study of local deposits of sand, gravel and rock (called the aggregate) to see whether they are suitable for concrete. Sand must be clean and hard and must grade uniformly in size of grain from $\frac{1}{4}$ inch down. The same applies to gravel and crushed rock except that the largest particles commonly allowable are $1\frac{1}{4}$ inches in diameter. If local materials are usable, a considerable saving will be effected, as only cement will need be freighted. A brand of Portland cement should be chosen which is guaranteed to meet the specifications of the United States Government or those of the American Society for Testing Materials.

Mixing the Concrete and Building the Road

It is much faster and cheaper to mix the concrete with a machine than by hand. Depending on the grading of the aggregate, the concrete is usually proportioned 1 bag of Portland cement to 2 cubic feet of sand and 4 cubic of screened gravel or crushed rock, or 1 of cement to 2 of sand and 3 of gravel or rock. During the grading and draining of the road, the aggregate is hauled and piled at convenient points. The concrete is mixed mushy wet, is deposited to the thickness of 6 inches upon the firm old road-bed and is brought to grade and shape by means of a templet. In order to shed the water to the side drains the surface of the concrete is given a rise or crown in the center of one one-hundredth, to one seventy-fifth to the width of the roadway. The surface is finished with a wooden float and wire broom, by which means there is afforded perfect footing for horses. At intervals



Settle Important Things First

THE time to investigate harvesting and haying machines—the time to know which binder or mower is the best for you to buy, is before, not after, you have given your order. The success or failure of your whole season's work, from the plowing of the ground to the ripening of the grain, depends upon the quality and efficiency of the machines you take into the harvest field. Therefore, the selection of the harvesting machines that you will use is the most important decision you make. Settle that first—now—before the busy days of the season are on. Get catalogues from your local dealers, or send to us for them, and study carefully the harvesting and haying machines and tools made and sold under these names:

Champion Deering
McCormick Milwaukee
Osborne Plano

Bear in mind when you come to pay down your money that these machines have harvested the grain, and cut and cared for the hay from fields in every part of the world, and some of them have been in use in the United States for more than seventy years. The efficiency gained through this long period of field work under practically every conceivable condition adds nothing to the cost of the machine. In fact, it is because of this long experience that you can buy these time-tried and field-tested machines at the lowest market prices for reliable harvesting and haying machines and tools.

Another important point to bear in mind when considering the purchase of a harvesting or haying machine is the facility with which you can obtain repair parts if they should be needed. Delays at harvest time are too expensive to take any chance with them. You can secure practically any part of an I H C harvesting or haying machine within a few hours of the time that an accident occurs, and when you get the part to the binder it will fit in the place of the broken one.

To get the best work out of a binder it is imperative that the twine used be strong and smooth, strong enough not to break under the strain of tying the bundle and smooth enough to run freely from the can to the knotter. Twine that will do this is sold by I H C dealers under the trade names, **Champion, Deering, McCormick, Milwaukee, Osborne, Plano, and International**. There are four grades of each brand, namely, Manila, Pure Manila, Sisal, and Standard.

Your neighbors know I H C machines and binder twine. They will tell you what their experience with them has been. The I H C local dealer can furnish you with catalogues and full information, and will explain fully all the good points of the machines he handles.

You can get catalogues from the local dealer, or by addressing a letter to the



International Harvester Company of America

(Incorporated)

Chicago

U S A



of 25 feet the road is divided into sections by narrow contraction joints extending crosswise the road and entirely thru the concrete. These joints are formed by means of a thin metal or wooden cross-form or divider to which is tied a single or double thickness of tar paper with the paper face against the last laid section of roadway. After the surface of this section is finished, and while the concrete for the adjoining section is being placed, the cord holding the paper to the cross-form is

concrete pavements built in recent years, the average first cost has been \$1.22 per square yard. The annual up-keep expense per mile on these roads has been almost nothing. In Bellefontaine, Ohio, concrete pavements in use 18 years have cost annually for maintenance only $\frac{1}{4}$ of one cent per square yard. Up-keep cost of Wayne County, Michigan, country concrete roads for three years has averaged but \$2.50 per mile. In 1911 the mean cost of repairing macadam roads in New York



cut and the cross-form is removed. The tar paper adheres to the concrete and stays in the joint, which is reduced to the thickness of the paper by forcing against it the freshly placed concrete of the section under construction.

When the surface of the concrete has hardened enough to prevent pitting it is sprinkled with clean water and is kept moist for several days. Likewise, as soon as possible, the pavement is covered temporarily with 2 inches of sand or dirt from the side-road to give further aid in curing the concrete. Traffic is confined to the earthen side-roads until the concrete is about two weeks old. In the meantime shoulders of broken stone or gravel are built along both edges of the pavement. These are made 3 feet wide and sufficiently thick to be firm and to make it an easy matter at all times for wagon wheels to pass from the side-road onto the pavement.

The First Cost and the Real Cost of Roadways

There are two phases of the cost of any improvement—first cost and up-keep expense. In both items the concrete road has proven less expensive than any other kind of permanent roadway. Of some three million yards of city and country

state was \$800 per mile—10 per cent of the first cost. If these roads had been concrete, practically all this immense expense could have been saved and used in building new roads instead of repairing old ones. With better roads will come better schools, better churches, happier homes, better business and decreased cost of living.

WHAT THE DEPARTMENT OF CHEMISTRY HAS DONE FOR NORTH DAKOTA

By E. F. Ladd, Food Commissioner

(Continued from Feb. issue.)

But now let us turn our attention to more pleasant lines of our work, and we may consider first our water supply.

In the eastern states, New York and the middle west, where the rainfall is two or three times that for North Dakota, the

HARDY TREES & PLANTS

At 1/2 Agent's Prices
We Grow and Guarantee Them.
CATALOG FREE.
Strand's Nursery, Box 32, Taylors Falls, Minn.

4c to 16c each **APPLE TREES** Fairmont Nurseries Box 786 FAIRMONT, MINNESOTA

FERRY'S

Market gardeners and large planters everywhere place absolute confidence in Ferry's seeds. Professionals make their profits by knowing where to put their trust. Ferry's vegetable and flower seeds have averaged best for half a century. They are pure and they are vital. For sale everywhere.

1913 Catalogue free on application.
D. M. Ferry & Co., Detroit, Mich.

SEEDS

SALZER'S Alfalfa, Oats and Potatoes

Three great Salzer specialties. Thousands have enriched their bank accounts by planting Salzer's northern-grown seeds.

Salzer's Hardy Alfalfa—big, quick, continuous money-maker.

Salzer's Rejuvenated White Bonanza Oats—sworn-to yield of 60 to 250 bushels per acre. The biggest thing in oats.

POTATOES

Salzer's Earliest and other heavy yielding varieties. Change your seed stock this year while potatoes are low in price.

Succeed with Salzer's Seeds

For ten cents we gladly mail big packages Salzer's famous Alfalfa Clover, Prize Wheat, White Bonanza Oats, Silver King Barley and many other fine farm seed samples.

Catalog and Premium List FREE.

JOHN A. SALZER SEED CO.
215 South Eighth St., LaCrosse, Wis.

The Luverne Nursery :

DIRECT FROM THE GROWER TO THE INTELLIGENT PLANTER

The Hardiest varieties of Apples, Crabs, Plums, Compass Cherry, Small Fruits; Evergreens, Forest Trees. The True Norway Poplar, the Hardy Success Crab; also the only Hardy Red Raspberry, the Sunbeam. The choicest lot of Peonies in the Northwest.

WRITE FOR PRICES.

Satisfaction Guaranteed.

C. E. OLDER, LUVERNE, MINN.

Burpee's Seeds

are supplied every year direct to more American planters than are the seeds of any other growers. Do your seeds come direct from Philadelphia? If not, we should like to make your acquaintance. Simply send us your address (a postal card will do) and you will receive **Burpee's Annual for 1913**,—a bright book of 180 pages, which has long been recognized as "The Leading American Seed Catalog." Kindly **write to-day!** Address

W. ATLEE BURPEE & CO., Burpee Buildings, Philadelphia

question of the character of the water supply is quite different than that presented to us in this state. In New York as fast as soluble salts are formed in appreciable quantity, the heavy rainfall on the lighter soil washes these salts into the rivers and on to the ocean, but with us there is an accumulation in the soil for there is not enough of rain to wash those out of the soil, hence, we have alkali spots and everywhere an over-abundance of mineral salts, such as common salt, Glauber's salts, Epsom salts and alkali or sodium bicarbonate. Naturally, therefore, as soon as a well is sunk in such a region the salts are washed from the soil into the well water, accumulating there, and then our troubles begin. Many an animal, as well as man, suffers in health from drinking such water. A water containing as much as 1000 parts per million of total solids is not a good water for man, especially when there is any tendency to stomach trouble in any form. Such is not a fit water for the young child, infant, or for a person just convalescing from a fever. And yet, there are many waters being used with fully 2,000 to 4,000 parts per million of this class of solids. Animals that are forced to depend upon a water-supply containing from 3,000 to 8,000 parts per million of total solids will suffer, will not thrive well even tho well fed, and if the solids of the water happen to be made up largely of Glauber's salts and alkali, or sodium bicarbonate, you may lose many an animal, if forced to drink continuously of this water during the winter months. The injury may not be so noticeable in the summer when the animals may secure a part of the necessary moisture from the green grass, and yet we have waters with not only 3,000 to 8,000 parts per million of solids, but many contain as high as 20,000 to 37,000 parts per million total solids.

Let me cite a few examples of injury to animals to point out what I mean. A farmer whose horses had been watered at a creek nearly a mile away for years, had no trouble and his horses were always in good condition. For convenience he sunk an artesian well and thereafter the horses were supplied water from this well, but he reports that there was nearly always among his thirty horses one or more in the stable suffering from colic, requiring not infrequently medical attendance. An examination of this water showed that the horses were taking of Glauber's salts alone, besides alkali and other salts, four ounce per day, assuming that the horses drank the average amount of water. Four ounces per day of Glauber's salts! Is it any wonder that about once in two to four weeks the system rebelled and Nature tried to recuperate itself, that the horses suffered from colic and illness and did not thrive well? Putting the horses on the former supply of water the difficulty soon disappeared.

Built by One of the Largest Concerns in the World for American Roads Especially

The J. I. Case T. M. Company, Inc., maker of the famous Case Forty, is a \$40,000,000 concern. For seventy years it has manufactured the finest machinery in its lines. You know, and your friends know, the quality.

The Case Company has thousands of customers in every part of the United States. Our machinery goes to all parts of the world.

We are making the Case Forty for our old customers as well as for hundreds of people who will drive cars in the cities.

The Case reputation is staked in each car. Our methods of building, our grade of materials, must be better than usually go into Forties to maintain our 70-year-old standards.

Savings We Do Not Make

We could make large savings on the cost of our motors by using cheaper materials. Also on clutches, transmissions, drive shafts, wheels, axles and other vital parts. We could cut our assembling cost in two, and this cost is one of the largest.

We put into the Case—in every car—hundreds of dollars of extra value that does not appear on the surface. But that insures Case Service. No other Forty at \$2,200 ever gave equal value.

What Permits It

We can do what other makers can't. We created no new business

when we started making automobiles. We had 10,000 dealers and 65 Branches before a car was sold. We saved that selling expense. We saved officers', sales manager's and advertising department salaries, rent and other overhead charges.

Makers of other cars must include such costs in the price.

We put all these savings into the car without charging buyers an extra penny.

Have the Catalog

Write for the Case Catalog, or send the coupon for it. See what sort of car can be made for \$2,200. Note the Case Thirty also at \$1,500.

Case Cars are built for American roads after 70 years of building machinery to travel those roads. You need such a car.



This Emblem on an automobile has the same significance as the Sterling mark on silver.

J. I. CASE T. M. COMPANY, Inc.
659 State Street, Racine, Wis.

Please send complete information about Case "40" and "30."

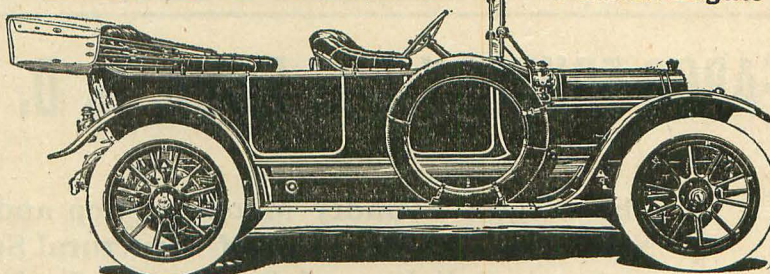
Name

Town

State

CASE FORTY

*The Car With the
Famous Engine*



5-Passenger Touring, Fully Equipped, \$2,200

Westinghouse Electric Starter; Westinghouse Electric Lighting System for all Lamps; Side and Tail Lamps, Combination Oil and Electric; Warner Auto-Meter; Electric Horn; Rain Vision Ventilating Wind Shield; English Mohair Top, Side Curtains and Cover; 37x4½-inch Tires; Firestone Universal Quick-Detachable Demountable Rims; 124-inch Wheel Base; Three-Quarter Elliptic Springs; 4½x5¼-inch Cylinders; Brown-Lipe Transmission; Timken Full-Floating Axle; Rayfield Carburetor with Dash Adjustment; Bosch Magneto, Dual System Single Point Ignition. The usual Tools, Tire Repair Kit, Jack, etc. *And in addition, Extra Tire and Tube on Rim, Extra Tube separate, Tire Chains, Tire Cover and Handy Work Light on long wire.*

J. I. CASE T. M. COMPANY, Inc., RACINE, WIS.

Case Cars are sold through 11,000 Dealers and 65 Branch Houses

Factory Branches at

FARGO, NORTH DAKOTA and WATERTOWN, SOUTH DAKOTA

Another farmer with a herd of mules fed them well during the winter months, with plenty of good hay and grain and still the mules grew thin, rough-coated and weak, and were constantly being treated by a veterinarian, who at last suggested that the difficulty must be with the water supply. Already several of the mules had died. An analysis of the water revealed a condition not unlike that already described. A farmer who spent his summers in North Dakota and winters in Ohio, as have too many of our farmers in times past, stated that the North Dakota climate did not agree with him and that after spending the summer in the state he found his health broken down in the fall, his kidneys affected, digestion impaired; but it was not the North Dakota climate but the water which he drank, charged with alkali and Epsom salts but clear and sparkling. Changing the supply of water resulted in immediate improvements in health, and for this man the North Dakota climate became superior to that of Ohio. I might cite innumerable cases of like nature for man and beast. It is well, therefore, that we know of what our water-supply is composed, especially where animals are not thriving well, or where members of the family are in ill health. Constant drinking of a water may lead one to accustom oneself to it so that its ill effects upon the health are not noticed; and what one person may be able to stand in mineral salts in water may be altogether too heavy for another member of the family.

We have, therefore, analyzed at the College on the average nearly two samples per day for the past four years; such waters being sent in by the farmers from the different parts of the state, and, therefore, we believe that the work done in the examination of the water-supply of North Dakota has been a means of saving the health of the farmer and of improving

PLANT WINDBREAKS!

AROUND
FARM
BUILDINGS



PFAENDER'S NURSERY
PIONEER NEW ULM, MINN.

Our Motto:

Hardy Trees For The Northwest



HAS
THEM
FOR ALL
PURPOSES

Evergreens and our quick-growing Red Cedars will in a few years be good protection and increase value of land.

You can have Apples for family and market by planting our hardy varieties.

WE GROW EVERYTHING

From an Elm Tree down to Perennial Flowers.

To give everyone a chance to try our Red Cedars I will send ten four-year-old trees (once transplanted) for \$1.00. Regular price \$17.00 per 100.

Ask for our Planter's Guide and Illustrated Catalog. Address

Wm. Pfaender Jr., New Ulm, Minn.

IT IS SIMPLY to get our NORTHERN

grown trees introduced in new territory that we make the following offers by mail prepaid by us in United States or Canada.



HARDY TREE SEED JUST THE THING FOR HOMESTEAD PLANTING ANY TIME BEFORE JUNE FIRST. DIRECTIONS WITH SEED

10,000 Ash Seed.....	\$1.00
10,000 Box Elder.....	1.00
2,500 Catalpa.....	1.00

Double the above for.....\$5.00

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100 Ash, 6 to 8 inch.....	\$1.00
100 Box Elder 6 to 8 inch.....	1.00
100 Nor. Poplar,.....	1.00

Double the above for.....\$5.00

FRUIT GARDEN

50 Strawberry Plants.....	1.00
6 Raspberry Plants.....	.50
6 Blackberry Plants.....	.50
2 Gooseberry Plants.....	.50
2 Currant Plants.....	.50

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SPRAY CALLENDER & PLANTING BOOK FREE. No order for less than \$1.00 accepted

BATTLE LAKE NURSERY Battle Lake, Otter Tail County, Minnesota, Dept. A

Established by A. A. deSmidt

SHRUBS NICE FOR GRAVE DECORATIONS

1 Bleeding Heart Two Years.....	\$.50
1 Snowball ".....	.50
1 Hydrangea ".....	.50
1 Spireas ".....	.50
1 Peony ".....	.50
1 Hardy Phlox ".....	.50

The above collection for.....\$2.50

ORCHARD

8 Apples & Crabs, 2 to 3 ft.....	\$2.40
4 Compass Cherries.....	1.60
2 Plums.....	1.00

The following not prepaid:.....\$5.00

Above collection 4 to 5 ft.....\$7.50

5 to 6 ft.....10.00

FARGO FOUNDRY CO., Fargo, N. D.

The Largest Foundry Machine Shop and Boiler Shop in the Northwest. A large stock of Structural Steel and Iron always on hand. Full Line of Blacksmith Tools for Farm use. The Biggest plant in the Biggest Little City in the world.

We make a specialty of modern Fire Escapes. Best Tools and Skilled Workmen is the secret of our success. While in our city call and see us and judge for Yourselves.

End of North Bridge, N. P. Ave.

the condition of his animals where he found them suffering from ill effects of what before was an obscure case upon his farm.

I call your attention to this matter in order that you may give some thought to the question of the water-supply both for the home and for the farm stock. Neither

should we forget that one of the chief means of spreading typhoid fever is thru the water supply. Wells are so located that they receive the drainage from the barns, yards, the privy vaults, or the slops from the house, and gradually the soil becomes filled with this material which drains into the well to contaminate

the water. During the past year many wells, especially in the smaller towns, have been found to show sewage contamination, and undoubtedly, were in many cases the means of spreading typhoid fever. With greater care and protection of the water supply there is little need of the typhoid fever now prevalent, even in the rural

From 6 Big Mills

Direct to You

Save 40% to 60% on Lumber and Millwork

You pay five profits when you buy lumber or millwork of your local dealer. His lumber comes from a mill controlled by the greedy combine. Too high a mill price to begin with. Five needless profits to pay. Wholesaler, jobber, commission man, salesman and your local dealer, each add a fat profit. No wonder the price you pay is outrageously high. We stop this hold-up game. We sell you direct at just one profit above a manufacturing cost of record-breaking lowness. We own all of our raw material. We manufacture every piece of lumber and millwork we sell. We have capital enough to handle our business without loans or other expense-incurring obligations.

We own Forests, Railroads, Mills

Our forests cover thousands and thousands of acres. There are billions and billions of feet of timber. We do our own cutting, hauling, railroading. Our six great mills are constantly busy manufacturing lumber and millwork. Their output is 20 to 30 cars a day of the finest lumber you can buy anywhere.

Huge Stocks—Quick Shipments

We carry immense stocks. All the millwork shown in our catalog is ready for shipment. We have miles and miles of seasoned lumber piles ready to load on the cars. Your order will go forward within 24 to 48 hours of time received.

Seven Railroads—Quick Delivery

Seven transcontinental railways maintain fast freight schedules from Seattle. Our shipments reach all points west of the Mississippi on an average of less than two weeks. Reach you while other concerns are getting your orders ready for shipment.

Look Ahead—Save 40% to 60%—Get Lumber of Famous Quality

You are a big gainer in both price and quality when you buy of us. You save 40% to 60%. You get lumber from the famous forests of the Puget Sound region. Free from sap and large knots. Does not warp or twist. Tough and strong. Lasts untold years. You can't get lumber like this

from your local dealers. Ask any of our customers. We'll send you names of some near you, if you wish.

Satisfaction Guaranteed

We take all the risk of pleasing you; we know you'll be delighted. We back every shipment with the guarantee that it will grade better than trust or combine standard and satisfy you in every way or your money back.

Study the Prices Shown at Left, Then Write Us for Price List and Estimate

We ship everything needed for building complete—lumber, sash, doors, shingles, millwork, hardware and paint. Our prices, delivered at your station, will open your eyes with wonder. How can we do it, you will say. The answer is simple. The immensity of our business cuts down the cost of production—our plan of selling gives you the direct benefit of this saving. Don't think of building before getting our prices. Send us your bill of materials for estimate. Even if you're not ready to build.

MAIL THE COUPON For Catalog and Price List

Catalog is so complete and plain you can make your selection with greatest readiness. Our prices effect for you a saving of 40% to 60%. Our guarantee insures your satisfaction. Don't wait. Get posted on what Hewitt-Lea-Funck offer you in lumber. Mail coupon today.

Hewitt-Lea-Funck Co.

661 First Avenue, SEATTLE, WASH.

Kindly send me your Catalog and list of prices on lumber and building supplies, laid down at my station.

Name _____

Address _____

Business _____

(NOTE—No charge for making estimates. Send carpenter's bill of materials for estimate)

Just look at these direct-to-you mill prices

Clear fir casing, per lineal foot - 11-2c



8x8.8 Colonial Column
Clear fir.
\$1.55

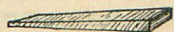


24x24 13-8
2 light, 95c



2 ft. 8x6 ft. 8
\$1.50

Clear fir flooring, per M \$23.00



"A" red cedar bevel siding, per M - \$24.50



Clear red cedar shingles per M - \$2.20
Extra *A* red cedar shingles, per M - 1.80

Stop paying Five Profits—

that's what makes lumber so high

From Mill to Wholesaler

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to Dealer

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to YOU

\$1400

sections, for it is in the rural sections and small towns that typhoid fever is most largely contracted and, in the majority of cases, from the water-supply.

I might also consider the work done by the department for the people of the state with regard to a study of the soils of the state as to their chemical composition, the presence of fertilizing elements, the condition of the humus in the soil and its relation to plant growth, and the overcoming of alkali; or, the work that has been done thru the period of more than fifteen years with sugar beets, the investigation of flaxstraw, or with paints and oils, but I shall take the time to call your attention to only one more line of work carried on by the Department of Chemistry for the benefit of the people of the state and thereby attempt to show how the Department has endeavored to be of practical benefit to the farmers in the experimental work which has been done in wheat investigations.

1. Six years ago there was added to the Department of Chemistry a milling and baking plant and since then an elevator has been erected to complete the facilities for doing experimental work with wheat and wheat products. At that time, the mills thruout the country were rapidly installing bleaching outfits, as were also many mixers and blenders of flour, and some of this latter class might well have been considered as dopestors in the preparation of food products, as much as were those who were adulterating other lines of food products. Even our best mills were forced to install these bleaching plants against the advice at times of the head millers themselves, or against the better judgment of those who were the owners of the mills because they were obliged to meet competition by the meanest man in the business. Was the purpose of adding those bleaching plants to improve the quality of the flour produced, or was it to enable them to perpetrate a fraud? In my judgment, in the majority of cases, fraud was the foremost thought among those who were the promoters of this business.

The installation of the milling and baking plant enabled the Food Department to take a stand against the bleaching of flour which was then working to the direct injury and detriment of North Dakota grown wheat. It enabled unscrupulous

millers or blenders of flour to purchase dark-colored or yellow and cheaper wheat products, or damaged wheat flour, bleach the same to resemble that produced from the superior North Dakota hard wheat. What was the result? This was forcing the price of the North Dakota superior and best grades of wheat to a level with the inferior grades that could be by the process of bleaching be made white in appearance and thus be used as a substitute for the superior product produced from our hard spring wheats in North Dakota. This was forcing the price of the North Dakota best grades of wheat to a level of the inferior grades, and had the process of bleaching continued, in less than five years or at the present time, the farmers of North Dakota would have received no more for their hard spring wheat than is secured for the cheaper and more inferior grades, and our product would have come directly in competition with the less white and inferior product produced from the Turkey Red wheat. But with the doing away with bleaching there is a demand for North Dakota wheat that will make a wheat flour to bring up the grade of flour made from other wheats. North Dakota farmers are entitled to the benefits that come from growing such wheat and in my judgment there is no question but what the farmers of North Dakota are receiving more per bushel for their wheat than would have been possible had the bleaching of flour been permitted. If the difference is but one cent per bushel on all the hard spring wheat grown in North Dakota you can readily see that the difference would be a considerable sum gained to the farmers of this state

SEED OATS, Regenerated Swedish select (Garton Stock) re-cleaned, 65 cents per bushel, Salzer's Billion Dollar and Early Ohio potatoes free from scab, 60 cents per bushel, bags free.
GRANK H. KADECHKA, LIDGERWOOD, NORTH DAKOTA.

SALESMEN of strong personality, salary or commission, to handle lubricating oils, greases, paints and a dozen profitable specialties. **THE WARREN REFINING CO., CLEVELAND, OHIO.**

SAVE \$\$\$\$ buying direct of us some or all of our \$ bargains. 16 apple, 100 hardy Apple root grafts, 10 Peonias and 4 Yuccas, 10 H. B. Cranberry 3 to 4 feet, 12 transplanted Spruce 12 to 18 inches, 25 Golden Willow 5 to 6 feet, 25 Boxelders 5 to 6 feet, 25 N. Poplars 5 to 6 feet, 20 Currants, 30 Raspberries, 1 bushel choice Seed Potatoes. Write the **ST. JOHN NURSERY CO. 504 ST. JOHN St. E. FAIRMONT, MINN.**, for bargains.

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Barbers always in demand, big wages, easy work, few weeks completes by our method. Free, beautiful and illustrated catalog explains everything. Write at once, special inducements now.

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A Full Value Blue Serge Suit for 17.50

That will give you satisfaction in style, fit and workmanship as well as in quality. Send in your breast, waist, seat, inside trouser, and sleeve length from center of back to hand, or send for measure blank.

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**AYERS JACK PINE
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Kimberly - Minn.



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Large Welding Plant and Machine Shop

Expert welders and machinists of ALUMINUM gear and crank cases; manifolds and housings; CAST-IRON and cracked sectional boilers; cracked or broken cylinders or water jackets; STEEL frames or any broken parts of automobiles or other machinery. We weld cracked steam boilers with our large portable plant at your home.

201 FIFTH ST. NORTH

Phone 926

FARGO, NORTH DAKOTA

2. Velvet Chaff wheat came upon the market and was at once condemned by the millers and a less price paid for the same, altho it was of superior quality in weight, size and plumpness of kernel. While the farmers were receiving from 5 to 7 cents per bushel less for this wheat, the majority of such wheat, however, was used, as near as can be learned, for blending to raise the grade of other wheat one or two points for the benefit of the mixer and manipulator of wheats and flours. The hard spring wheat that had, because of light weight, been classed as No. 2. N was, by the addition of this heavy wheat, weighing 62 to 64 pounds per bushel, made into grade No. 1 N. and thus the whole sold for an increase in price above No. 2 N. and with a profit of 5 to 7 cents per bushel upon every bushel of velvet chaff wheat used in mixing.

In connection with the work done by this Department, the Wisconsin State Grain Inspection Board recognized the true quality of velvet chaff wheat and in 1910 stated:

"The Commission, believing that velvet chaff wheat has been unduly discriminated against, have in conjunction with the N. D. Railway Commission, and with the co-operation of Prof. Ladd of North Dakota, had tests made of its relative milling value compared with fife and blue stem varieties. * * We will grade velvet chaff

wheat the same as the fife and blue stem varieties, but will not put it in a higher grade than No. 1 N."

Later the Minnesota officials were brought to recognize the merits of velvet chaff wheat, and thus a difference of five cents per bushel was secured for the benefit of the farmers of North Dakota on every bushel of velvet chaff wheat grown in the state. Today the price of velvet chaff wheat is the same as that of the same grade of fife and blue stem. Would this condition have been made possible had not the Experiment Station undertaken the investigation and placed repeatedly before the people the true value of velvet chaff wheat thru the bulletins issued by the Food Department?

3. Durum or macaroni wheat, six years ago when the Department began its agitation against the discrimination in the spread of prices, was being sold at 20 or 25 cents per bushel below the price for hard spring wheat, and seldom was the spread less than 17 cents per bushel. Again and again the Department placed before the public in its bulletins the information gained with regard to the true value of durum wheat, and repeatedly showed that the mills which were condemning the wheat, were themselves often using from 15 to 20% of durum wheat in the mixture then ground in their mills.

In connection with this work we sent out to the people of the state samples of the flour produced from durum wheat and this information and work, together with

RUSSIAN GOLDEN WILLOW rooted 2 to 5 feet, \$10.00 per 1000; packed free. We do not want to burn 100,000 of them, therefore, this low price. Agents wanted. **DEEPHAVEN NURSERY**, Wayzata, Minn.

We grow the Wonderful Norway Poplar, and a full line of Hardy Trees, Fruits and Flowers. Write for price-list.

ELMWOOD SELECT NURSERY
Paynesville, Minnesota

10 HIGH GRADE EASTER POSTCARDS FREE
Send us 10c. and receive 10 Highest grade Easter postals and also complete plan how to get your money back. Address **X-CEL NOVELTY CO.,** FARGO, N. D.

CALIFORNIA HONEY, freight prepaid anywhere on trial before paying. Three grades: 10½¢, 11½¢, 12½¢ pound. Sample 10c. Leaflet free. Agents wanted, good profits, steady orders. **Spencer Apiaries Co.,** Box 171, Nordhoff, Calif.

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For various fancy work. One pkg. 10 cents, 3 pkgs. 25 c. Stick pin FREE with 25c. order or with 10c. order and 3 young ladies' names.

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Is land in Central Missouri, Midway between St. Louis and Kansas City. Two lines of Railroad; Division point.

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Eldon, Missouri

North Dakota Farmer

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Farm, Stock & Home.....1 year, \$.50	
McCall's (with free pattern) ..1 year, .50	
Woman's Home Weekly.....1 year, .25	
Regular Price.....\$1.25	
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Farm, Stock & Home.....1 year, \$.50	
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Regular Price.....\$1.35	
CLUB NO. 64	
Farm, Stock & Home.....1 year, \$.50	
Successful Farming.....1 year, .25	
Woman's World.....1 year, .35	
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CLUB NO. 65	
Farm, Stock & Home.....1 year, \$.50	
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CLUB No. 66	
Farm, Stock & Home.....1 year, \$.50	
McCall's (with free pattern) ..1 year, .50	
Home Life.....1 year, .50	
Regular Price.....\$1.50	
CLUB NO. 67	
Farm, Stock & Home.....1 year, \$.50	
Home Life.....1 year, .50	
Woman's World.....1 year, .35	
Regular Price.....\$1.35	
CLUB NO. 68	
Farm, Stock & Home.....1 year, \$.50	
Kimball's Dairy Farmer.....1 year, .50	
Western Poultry Journal.....1 year, .50	
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This Is a Great Offer.

For One Year and Choice of Any Club Listed
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\$1.00



A Six Piece Music Supplement Free With Each Club

Containing words and music of the most popular song hits of the day is included free with each club. Full sized sheets. You know what six pieces of music would cost you. This is free with each club. Arrangement of clubs will not be changed, but papers need not all go to same address. Notice the high character of all the publications listed in these clubs. That splendid, practical fearless **FARM, STOCK & HOME**, Minneapolis, Minn., is included in each and every club.

Address all orders to:
North Dakota Farmer
Lisbon, N. D.

Inclosed \$_____ for which you are to send the Farmer

one year and Club No. _____

Name _____

Post Office _____

Rural Route _____

State _____

(You Can Use This Coupon In Ordering.)

MAGAZINES SENT TO ONE OR TO DIFFERENT ADDRESSES

ANY CLUB AND NORTH DAKOTA FARMER FOR ONLY \$1.00

other influences that have been at work in the state and country, have brought the price of durum wheat to approximately the same level as that for fife and blue stem of the same grade. It is doubtful if we ever see the spread in prices that has existed in times past. Would this benefit have come to the farmers of North Dakota had there not been a fight made in their interests and experiments conducted to substantiate the claims?

Attention should also be called to the fact that a larger industry should be built up in the United States in the manufacture of a superior grade of macaroni produced wholly from the durum wheats. Today, it is said that much of the macaroni produced in this country (and that of a most inferior quality) is made from soft wheats not suitable for the production of macaroni; but when high grade durum is used the article is found to be the equal, if not the superior, of much of the macaroni produced in Italy. You would do well, therefore, to encourage the use of macaroni as an economical article of food and the production of macaroni from the true durum or macaroni types of wheat as grown in the Northwest, thus building up another industry of vast importance to the people of this state and ensuring a demand for this product which will command a price equal to that of the best wheats produced in America.

Before closing I desire to call attention to the fact that two years ago the Department received no appropriation from the state to continue the experimental work in the testing of wheats, flours and milling products of the state, and therefore has not been in position to do very much during the past year. The Department has co-operated as far as possible in the work with the Department of Agriculture at Washington, but could accomplish little directly for the benefit of the farmers of North Dakota.

During the past fall there has been considerable complaint on the part of many wheat growers with regard to the character of the grade which was given them at the elevators, but the Department could send no man out to make a study of the problem for funds were not available. We earnestly urge therefore, that your influence be given to continue to the fullest extent the work done at the mill by securing an appropriation from the state specifically for this purpose.

In the spring we shall hear a great deal with regard to the price that will be paid for wheat that has remained in the shock unthreshed, as well as with regard to the price paid for flax which remained in the field until the spring. It is believed that had the Department had the funds available, it could be shown that the amount of damage was not as great in many instances as is claimed; or, that even the effect on the flour of the introduction of a

small amount of sprouted grain or bleached, or sun-burned, is not as great as is made in the discrimination in price. There are many problems that need to be more thoroly investigated, and among those which have been in progress in the Department may be mentioned the following:

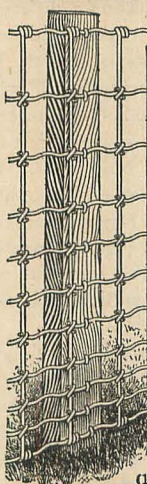
The effect of stacking grain vs. threshing from the shock; the effect of bin-burning; the effect of rain and frost on the value of the wheat for flour and bread production; the real value of shriveled wheat as compared with that fully matured; and many questions in connection with methods of milling, such as tempering, blending, etc., that are of direct interest to the practical miller here in the state who has not the facilities for making experiments himself. It is to be hoped that this line of research may be continued, but to what extent the work shall be carried on will depend upon whether or not the people of the state lend their support in a way that will enable us to go on with the investigations that have been made and enlarge the field so as to include a study of the use of wheat in the production of macaroni and in the development of a superior seed wheat for flour production.

Among Our Advertisers

A HIGH-QUALITY, LOW-PRICED CAR

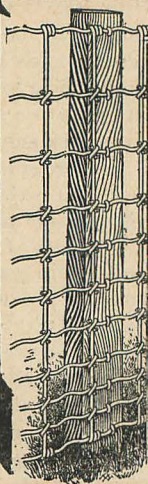
With the completion of their new three-story building providing for additional

Fence Your Fields With Strongest - Last Longest - Best Looking



Square Deal
Number 9

Our heaviest fence—all wires are No. 9, heavily galvanized, tough and springy. Especially adapted for hog, horse and bull lots, where fencing gets excessive strains. The **SQUARE DEAL LOCK** and Wavy Strand Wires, braced by the one-piece Stay Wires, insure a permanent, always tight, trim looking fence that will turn any kind of stock, from sucking pigs to breechy bulls, and give the longest, most satisfactory service.



Square Deal
Number 11

A medium heavy, strong, durable and good-looking fence that will turn stock effectually. The top and bottom wires are No. 9, all others are No. 11. Spacing same as No. 9. This fence is unusually strong and rigid in construction, also elastic enough to stand heavy strains, heat and cold without becoming baggy, saggy and unsightly.

The **SQUARE DEAL LOCK**, Wavy Strand Wires and one-piece Stay Wires are of equally high grade material as in our heavier weight fencing.

(18)

Keystone Steel & Wire Co.,

shipping and assembly facilities for 1,600 cars, the Reo plant now consists of twenty-one buildings covering an area of seventeen and one-half acres.

The essential secret of the Reo's worldwide popularity is largely due to scrupulous care, supervision and tests given to every Reo before it gets the final O. K. of their inspector and factory expert.

They have specialized for years in the proper cutting of gears and now employ thirteen Gleason bevel gear generators costing \$2,000 each. These machines do not merely cut the tooth but actually generate it. They are used only for finishing cuts and do the fine hair's breadth finishing only; the rough milling being done on another machine.

Their cam gears are of the latest improved special type. The machines used for cutting these gears are imported from Germany. The cutter is in the form of a hob, gear turning at the same time that the tooth is being formed. The result is a quiet running gear. The Reo equipment consists of five of these machines.

Their transmission gears are all cut on the Fellows gear shaper of which we have nineteen, costing \$1,300 each. The transmission gears are roughed on these machines and then are heat treated and finish cut on the same machine.

Every part that enters a Reo the Fifth thus not only undergoes a rigid chemical analysis but it also receives the very best heat treatment which is essential to the long life of every working part.

Suffice it to say that they have employed every known device in the world to raise the Reo standard of quality, strength and efficiency year by year and it is only by so doing and by the employment of the best

Famous Square Deals

ing - Easiest Put Up - Most Economical

Square Deal

Number 12

This is our biggest seller. It seems to meet the wider demand for a light, yet strong, durable field fence. More of it is sold because used on larger lots or fields than the heavier grades. The top and bottom wires are No. 10, all other wires are No. 12. Being lighter, it costs much less. Spacing same as Nos. 9 and 11. Only difference is in size of wires. Easy to handle and put up. Knots being smooth, it unrolls easily and evenly.

Folding Rule

FREE

Before you buy any fence write for latest Price List and Catalog.

We want you to know how Square Deal Fence is made—why it is the best and cheapest—why it is so popular—why it lasts longer, stands up better and gives you more for your money than any other fence made. Our catalog gives all these reasons and proves them. Write a postal for it today, and we will send you a free 2-ft. Folding Rule FREE, postpaid, if you will mention this paper.

018 Industrial St., Peoria, Ill.

labor-saving devices that they are able to put into the Reos the very best of material and yet market their product at a price which spells big value.

NORTHERN GROWN POTATOES

Demand for Salzer's Seed Potatoes.

One of the changes which has come with all this back-to-the-soil talk is in the methods of selling and shipping seed potatoes. Thousands of families in the cities, as well as the families living in the country, but having only a small patch of ground, are growing potatoes in small quantities.

To meet this demand, the John A. Salzer Seed Co., of Lacrosse, Wis., one of the largest seed potato growing concerns in this country, are now selling—not whole potatoes, but potato eyes, all ready for planting! Of course, those who grow potatoes in quantities more than a few bushels still stick to buying whole tubers.

Potato culture is making tremendous advances, and the Salzer Seed Co. have succeeded in producing a general-purpose potato that is ready for market six weeks from planting. It is a reliable yielder at

all seasons and anywhere. They also grow and ship to all parts of the country every variety of potato, and the reports for the present season are that this will be the greatest potato year ever known in the United States.

THE HOUSE THAT PAYS MILLIONS FOR QUALITY

Do you know what house that is? Well, it's a very complimentary name that is often applied to The Mishawaka Woolen Mfg. Company, makers of "Ball-Band" Rubber Footwear.

This name grew out of the fact that an official of this company remarked that cheaper materials could be used in "Ball-Band" Rubber Footwear and at least a million dollars a year more profit realized—and this without making any noticeable difference in the looks of the boot and very little difference in the service it gives.

Why don't they do it? Because some men not even for a million dollars more profit every year, are willing to sell the satisfaction they get out of doing everything they do the best they know how.

You have heard the story of the man who was building a house and wanted his walls paneled in oak. The contractor told him that he could save several hundred dollars by using pine stained to look like oak.

"No, give me oak," said the owner.

"But, if nobody can tell the difference why not take the pine?"

"Because," said the owner, "I am an oak man, and not a pine man stained to look like an oak man."

I think the men who make "Ball-Band" Boots are oak men.

(Among Our Advertisers' Cont. Page 28)

Bigger Crops!—Better Quality!

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MINNESOTA-GROWN PEDIGREED SEED CORN

No guess-work here—We offer our own grown pedigreed Seed Corn, carefully sorted, graded and tested. Seed that you can absolutely depend upon—that will mature in your locality and produce more and better quality Corn per acre. Don't take chances on ordinary Seed, learn about our **Golden Jewel**, the 124 bushel per acre corn. Guaranteed to satisfy or money back. Samples, full information and our new 1913 Seed Book free—Write.

Farmer Seed & Nursery Co.
583 Third Avenue
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3 Years
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\$1.00

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PUBLISHED EVERY MONTH

W. G. CROCKER, PUBLISHER
Lisbon, N. D.

E. F. Ladd, Editor FARGO, N. D.

BUSINESS MANAGEMENT, LISBON, N. D.

ASSOCIATE EDITORS

PROF. J. H. SHEPPERD, State Farm Notes.
PROF. W. B. RICHARDS, Livestock.

PROF. C. B. WALDRON, Fruits, Forestry,
Insect pests.

GEO. HAUSMANN, Poultry.

Remittances should be made by Draft, Post-
office Order or Express Order.

All Articles and Editorial Matter should be
addressed to E. F. Ladd, Fargo, N. D.

Address all business correspondence to the
Lisbon office.

Vol. 14 MARCH, 1913 No. 9

The next issue will be a Dairy and Live-
stock Number. You cannot afford to
miss it.

That man is best educated who can
adapt what he knows to the practical
affairs of life.

Give the boy something more than
board, clothes and a "steady job," and
there will be no need of the pleading with
him to remain on the farm.

How do you like this issue of the North
Dakota Farmer? We believe it the best
yet. What are you willing to do to im-
prove it? This is the age of co-operation.

Will you not interest your neighbors in
our great clubbing offers on pages 19 and
21? There never was a better chance to
get such standard papers for so small a
price.

To educate a man for what nature never
intended him to do is simply throwing
money away as well as time and opportu-
nity. "Blessed is the man who has to work
and working finds the thing he likes to do!"

Did you ever think what an immense
manufacturing plant you are running?
How dependent are the people upon the
products of your plant! Are you as care-
ful of the "waste products" as are the
great packers? Pretty good prices these
days.

Those in authority should not spend
too much time in order to determine the
smallest possible sum of money an agricul-
tural college can exist upon, but rather to
determine how much it can use to good ad-
vantage. Money spent in agricultural
education returns to the taxpayer many-
fold. Thanks to the last legislature for
its generous appropriations.

Farm credits and marketing farm prod-
ucts are among the greatest problems now
before the American people and it will re-
quire big men to solve them. The pro-
ducers of the country's wealth will not
always submit to the financial policy and

speculative interests of those who fix
prices of products and rates of interest.
The creators of wealth should not also be
its servants.

A little time spent this spring in plan-
ning a crop rotation for the coming years
would be used to good advantage. After
the plan has once been made, let no tempo-
rary advance in the price of one commodity
or the extremely low price of another
cause you to deviate from the chosen ro-
tation. Wheat, oats, barley, corn, is not
a very bad rotation—together with a
patch of alfalfa.

The time is soon coming when a bounty
on rats will be more necessary than that
on gophers. Cats are prolific and the very
best exterminators. Rats are fully as
prolific and the worst disease carriers. A
barrel of water in which three or four
pounds of baking powder and a quantity
of salt have been dissolved makes excellent
fire protection and it also may be used as
a trap for rats, if a tilting board is arranged
in the cover.

"The young man who begins the serious
business of life with a quarter-section of
North Dakota rich prairie soil and an edu-
cation to match this investment is in
possession of the fundamentals of inde-
pendent citizenship. There is no state
where both may be had on easier terms
than right here in our own commonwealth.
I advise the boys to get a piece of land and
to study agriculture, knowing that when I
am no more, they will bless rather than
curse my memory!"—President Worst.

Occular demonstration is the most
effective educational agency that can be
employed for the betterment of agricul-
ture. Lectures do much good and class-
room recitations are not to be undervalued,
but the demonstration farm clinches the
argument. There should be a dozen
demonstration farms in every county in
the state and a strong practical man in
charge of each county. It would cost
lots of money, but every dollar thus ex-
pended would add ten dollars to the accu-
mulated wealth of the state.

On January 1 the new parcel post law
went into effect. Are you now tak-
ing advantage of its provisions? Those
who are diversifying will receive the
greatest benefit. The jar of butter, sent
to the nearest store by mail will bring by
the return post groceries, dry-goods or
other articles of merchandise. The mer-
chant is wise who gets in line with the new
law. It is now up to the home merchant
to catalog his goods and meet the competi-
tion of the mail order concerns. It will
mean the extension of the rural telephone
systems and closer ties between the home
merchant and the farmer.

With beans at \$2.50 per bushel, is it not
strange that no more farmers of the state
are engaged in raising beans? A young
man who was making a call on a young
lady was confronted by the little brother,

who asked as he extended a handfu' of
beans, "What's them? The young man
replied, "Beans, my little man." Turning
to his big sister, who has just entered the
room, the little fellow shouted, "There,
Sally, you said he didn't know beans!"
We certainly fail to "know beans" if we
neglect to put in a small patch of white
beans this spring. There are few dishes
more appe-izing than well-cooked beans.

While reformation schemes and re-
formers are in evidence and exceedingly
active—generally about trifles—would it
not be a good plan to popularize some of
the old time but sadly neglected customs
that our fathers and mothers practiced,
especially such as relate to plain living,
economy, systematic saving, etc. The
exceedingly large number that have tried
to ape the rich without the lax conscience
or opportunity for graft necessary to sus-
tain the social role they have assumed
could give valuable testimony if they
would. But it doesn't pay. Plain living
means long life, abundance, strong friend-
ships and good sense. Those who sacri-
fice their hard-earned means upon the
altar of Show usually go into hiding later
on.

If the good people, including lawyers,
merchants, bankers, railroad managers,
etc., who are just now giving farmers so
much gratuitous aid, both financial and
oratorical, would improve their own meth-
ods of doing business proportionate to
what they advise farmers to improve their
methods of farming, the country, including
the farmers, would be materially bene-
fited. If farmers were as tardy with
putting out their crops as the courts are of
securing justice, the world would go hun-
gry. Scrub farmers are no worse than
shyster lawyers and calculated on the
percentage basis, not so numerous. Quack
doctors, corrupt municipal officials, graft-
ers and crooked politicians are all as
amenable to reform as the moss-back(?)
farmer. On a general average, the farm-
ers can give some pointers to those who
are over-sollicitous about bigger crops.

"Build up the Home Town" is the slogan
of Eastern farm papers circulating thruout
the Northwest. Yes, it is very well to
advocate such a project, but it does not
seem very consistent for those same papers
to load their pages with patent medicine
and mail order advertising. Some of our
readers took exception to our advocacy of
the parcel post. We heartily believe
that this law will be most beneficial to the
farmers and tradespeople in this state.
You will note that the cost of transporta-
tion on any rural route is far less than be-
tween two points several hundred miles
apart. If the home dealers are wise they
will inaugurate a plan by which they may
now easily compete with the big houses of
the East. Let the farmers also arrange to
find a market for their produce.

Pure Food Advertisers

The products advertised below are in compliance with the pure food law of North Dakota and of the highest grade
ASK YOUR GROCER FOR THEM.

“BUY”

“EAT”

HOME BRAND

Pure Food Products

“ECONOMY” “SATISFACTION”

Griggs, Cooper & Co.

MANUFACTURING
WHOLESALE
GROCERS,

ST. PAUL, MINN.

Main Offices:
CORNER THIRD AND BROADWAY

DR. PRICE'S
JELLY

DESSERT
NUTRITIOUS-WHOLESAME

One package, 10 cents, makes
pint of wholesome Fruit Jelly. All
flavors from true fruits.

The Purest of Pure Food Products

are packed under the Brands of

Nokomis
PURE FOODS

Hiawatha
PURE FOODS

Blue Bird
PURE FOODS

Wampum
PURE FOODS

Stone-Ordean-Wells Company
DULUTH, MINN.

BRANCH HOUSES-Minot, Bismarck, N. D. Billings, Bozeman,
Butte, Great Falls, Mont.

MONARCH BRAND



FOOD PRODUCTS

A GUARANTY OF PURITY. A WEL-
COME GUEST at every table where the
HOUSEWIFE demands the BEST. THE
MONARCH LABEL insures QUALITY in
Coffee, Catsup, Pickles, Maple Syrup, Canned
Goods or any article bearing the MONARCH
BRAND of REID MURDOCH & CO
CHICAGO

ANOTHER PURE FOOD PRODUCT

CEROKOTA

Self-Rising

Pancake Flour

Is a Scientific Preparation of Healthful Appetizing Ingredients
and the Best Flour Milled in North Dakota

GUARANTEED Pure and Wholesome

Ask Your Grocer for a Trial Package

Bemmels Milling Company

Sole Manufacturers

Lisbon,

North Dakota

Livestock Department

FARM AND STOCK NOTES

N. J. Shepherd, Eldon, Mo.

A ration must be palatable.

With growing colts plank floors are a fruitful cause of bad feet.

Over-churning is the cause to a very great extent of butter not keeping.

As a general rule, with oats sowing it is best to take the first favorable opportunity.

The profitable line of production is to maintain good health with early maturity.

A good pedigree always adds much to the value of a horse for any purpose.

will make a better flavored butter, as it causes the cream to ripen more evenly.

Give the fowls not only plenty of food, but supply them with plenty of grinding material to prepare it for digestion.

It is poor economy to plant or sow any crop when the soil is too wet to work readily into a good condition.

The farmer derives his wealth from two sources: From the sale of his produce and by increasing the value of his resources.

With the work-teams, a general rubbing and brushing should be given after the days work is done to insure a good night's rest.

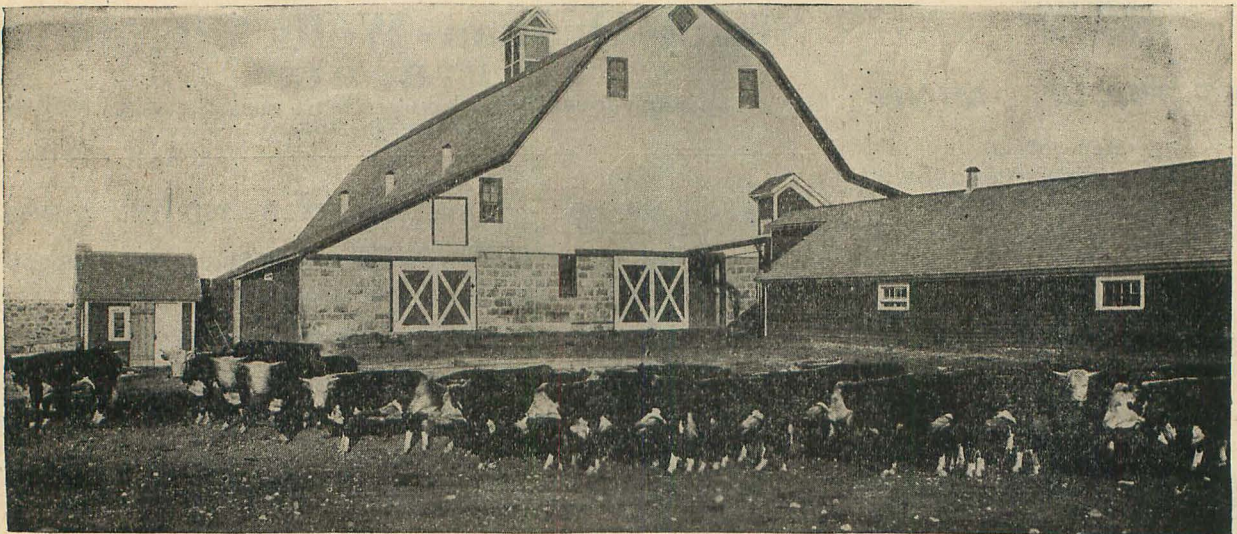
It is reasonably well settled that there is no normal system of feeding that will materially change the percentage of fat in a cow's milk for any great length of time.

The making of milk is essentially a nervous function and if this function is disturbed, there will be more or less variation in the process of milk secretion, especially with cows somewhat advanced in lactation.

It is with fowls as it is with other livestock—it behooves the breeder to keep the best. It costs no more to feed, care for and house choice stock than it does the common kinds. It is practically a waste of time and money to keep poor or indifferent fowls and it is poor economy to buy cheap birds when a few extra dollars will secure good ones.

MANY MORE SILOS ARE TO BE BUILT

This will be the big year in North Dakota for silos if the present plans



The temperature of the cream has much to do with effectiveness of the churn.

The way the cow is fed is largely the way she will produce in milk and butter.

Engaging in any pursuit much of our future success depends on the way we begin.

Much of the cheese flavors in butter is caused by allowing the cream to stand too long.

While breed in dairy cows is an important thing to be considered, it is not more so than individual quality.

Frequent stirring of ripening cream

Every day that a hog is kept longer than is necessary to fit him for market increases his cost and the risk of total loss.

At no time in the life of the animal is the influence of liberal or of scant feeding so great as when the animal is young.

No aged sow that has proved herself a good breeder and suckler should be disposed of to make room for a young and untried sow, as long as she will raise good litters of thrifty pigs.

The horses that have been idle the greater part of the winter should be put to work gradually in the spring and in the end they will be better able to do all that may be required of them.

are carried out. There are more inquiries from different sections of the state than at any former time. This is due primarily to the increased interest now being shown in dairying in North Dakota and especially to the presence of federal experts in silo construction at Grafton, LaMoure and other sections of the state. These have created a wide enthusiasm in the interests of the silo. Because of the long winters in North Dakota when there is no green feed for the cattle the argument in favor of silos is easier than in some other states.

Representatives of the North Dakota Agricultural College, the superintendents of the sub-stations, the representatives of the Better Farming movement and

especially of the state dairy department under Commissioner Flint have done a great deal of missionary work during the past year. The college extension department has sent out articles on silo construction, showing plans, the cost and other details until the farmers have become thoroly familiar with the expense to be incurred. Instructions are also issued as to the methods of preparing silage and its cost.

Of the various types of silos advertised the official endorsement of the form has been given and that appears to be the favorite.

During the present spring and summer there will be a great many of these constructed in North Dakota in preparation for the silage this fall. This will mean a greatly increased dairying interest. Some former creameries are being reopened and new ones are being established. Cheese factories are also to be started. Eckman, Bottineau County, is to have a cheese factory ready for business April 1. Another is to be established at Minot by the Farmers' Equity Society. The creamery at Lisbon has just been reopened and the one at Sheldon in the same county may be opened soon. Lansford is to have both silos and a creamery and other sections, especially the southwestern corner of the state are discussing both

GOVERNMENT PURCHASE OF STALLIONS FOR BREEDING ARMY HORSES

Under the provisions of the current appropriation act for the Department of Agriculture authorizing the inauguration of experiments in the breeding of horses for military purposes and providing \$50,000 for that purpose, the Secretary of Agriculture, with the concurrence of the Secretary of War, has appointed the following gentlemen as advisory agents in the selection of stallions and to assist in the operation of the Government's plan: Mr. Henry Fairfax, of Virginia, for Thoroughbreds; Mr. C. L. Railey, of Kentucky, for American Saddle horses; Mr. Walter Palmer, of Illinois, for Standardbreds; Mrs. Maxwell Evarts, of Vermont, for Morgans.

Each gentleman acts with the officers of the Government in the selection of stallions of the breed he represents. The Secretary of War has designated Lieut. Col. D. S. Stanley of the Quartermaster Corps to represent the Army, and the Secretary of Agriculture has designated Mr. George M. Rommel, Chief of the Animal Husbandry Division of the Bureau of Animal Industry, to represent the Department of Agriculture.

Thirteen stallions have been purchased to date, as follows:

Thoroughbreds; Gold Heels, by The

Bard; dam, Heel and Toe, Charcot, by Common; dam, Spanish Match.

Saddle horses: Young Bill, by Golden King; dam by Bourbon Chief. Fair Acre King, by Bourbon King; dam, Aletha Chief. Richmond Choice, by Rex Peavine; dam by King Richard.

Standardbreds: MacNunne, by Mac Dougall; dam, The Nunne. Sigler, by Red Medium; dam, Maud Sigler. BeGue, by Wiggins; dam, Lady Crescent. Twilight M, by Delmont Jr.; dam, May Fry. Lord Rion, by Arion; dam, Madge Fullerton.

Morgans: Daniel Webster Lambert, by Joe Allen. Madison Lambert, by Lambert B. Prince M, by Ethan Allen 3d; dam, Topsy M.

All of these horses are well bred and registered, and some are well-known individuals. Gold Heels, for example, had a conspicuous career on the turf; Common, the sire of Charcot, was by Isonomy, winner of the Derby and other important stakes in England. All the Saddle horses thus far purchased having had winning records at the Kentucky fairs. Of the Standardbreds, MacNunne is notable in that he, like Carmon at the Colorado stud of the Department of Agriculture, is a grandson of Robert McGregor. Sigler was first in two-year-old class for Standardbred trotters at the National Horse Show in 1911; and Lord Rion's sire, Arion, sold for \$125,000. The Morgans thus far purchased are excellent representatives of the breed and should prove useful as sires of cav lry horses of good size and con-

formation. The sire of Prince M, Ethan Allen 3d, has left a remarkable impress on the character of the Morgans of the east side of Vermont.

The Department of Agriculture expects to make other purchases during the winter.

COW FEED FROM AND ACRE W. C. Palmer, Agri. Ed., N. D. A. C.

How many acres will it take to feed a cow for a year? The answer to this problem depends on a good many things as kind of crops, climate, soil, etc. By assuming that the crops will give a certain yield it is possible to get the answer. In the accompanying diagram this has

Your Silo Book Is Here

Send us your name and address at once for your copy. Learn about the silo door you can open and close with one arm. Most convenient, and safest. Lets you keep silo door closed airtight protecting your silage all year around.

The Hinge Door and Lansing Silos

(Copyrighted)

Your choice of two famous makes. Hinge door has safe ladder—all steel door frame—strong anchor base—Billet steel hoops—dozens of big features. Catalog tells all. Write today.

Woods Bros. Silo & Mfg. Co.
General Offices, Lincoln, Neb.
Lansing, Mich. Maryville, Mo. Minneapolis, Minn. Cedar Rapids, Ia. East St. Louis, Ill. Topeka, Kas. Lexington, Ky. Denver, Col. Spokane, Wash. Write Dept. 8 Nearest Office.

MAIL POSTAL NOW

W. F. JACOBS Livestock Auctioneer

Thoroly Posted on Pedigress

Terms Reasonable LISBON, N. D. Write for dates

Make \$2000⁰⁰ more per Year

Hundreds of farmers **right now** are making from \$1000.00 to \$2000.00 a year extra money, besides keeping up their farm work, making wells with the

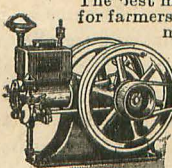
Improved Powers Boring and Drilling Machine

Bores 100 ft. in 10 hours. One man can run it; a team operates it and easily moves it over any road; Bores slate, coal, soapstone—everything except hard rock, and it drills that. No tower or staking—rotates its own drill.

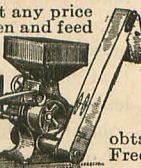
20 years actual service all over the world have proven this the **fastest and most convenient well machine made.** Easy terms. Write for catalog.

LISLE M'F'G. CO. - - Box 44" Clarinda, Iowa.

Engine & Feed Grinding Outfit



The best machine at any price for farmers, stockmen and feed mill operators.



Established 1879

THE HOWELL ROLLER FEED MILLS have been wonderfully successful everywhere. They wear a life time, grind twice as fast with the same power as the best burr or stone mill made. Good money in custom grinding. Grinds Graham and Rye Flour as well as feed. Engine is of latest and most up-to-date design. Runs at proper speed to obtain best grinding results. Simple and Durable. Free Catalog D3 tells everything.

R. R. HOWELL & CO., Minneapolis, Minn.



Purebred Registered
HOLSTEIN CATTLE
The Greatest Dairy Breed
Send for FREE Illustrated Book
Holstein-Friesian Asso., Box 135 Brattleboro, Vt

SHROPSHIRE RAMS

I have forty-five thoroughbred Shropshire rams for sale. Coming two and three years old. Prices right. Call and see what I have to offer or write.

FORRESTER H. SMITH

Amenia - - North Dakota

CLASSIFIED ADS.

One Cent a Word

Small advertisements will be classified under appropriate headings at the low price of one cent a word for each insertion. Cash must accompany all orders. Each initial or number must count as one word. TRY IT HERE.

LIVE STOCK

CATTLE

FOR SALE

GALLOWAY CATTLE

J. W. & F. T. PETERSON, Litchfield, Minn

FOR SALE: Registered Jerseys. Bull calves and one mature Bull at reasonable prices. W. G. Weeks, Backoo, N. Dak.

SWINE

POLAND CHINA PIGS, also Shropshire sheep. Seed grain. GEO. N. SMITH, Amenla, N. D.

MISCELLANEOUS

Envilla Stock Farm, Cogswell N. D. will quote you special prices on Angus Cattle, Shetland Ponies, Duroc Jersey Hogs, Wolf and Fox Hounds, Pure Bred Poultry Pet Stock. Write them.

FOR SALE

Percheron, Belgian and Shire horses

J. W. & F. T. PETERSON, Litchfield, Minn

SEED CORN

We have saved a choice lot of Home-Grown, Seed Corn, carefully selected and Fire-dried. Write for particulars and prices.

SUTTON & AHERIN

Proprietors of Lisbon Seed House

LISBON, - - - NORTH DAKOTA

DETECTIVES WANTED. Young men to operate in own locality, secret service work, experience unnecessary, inclose stamp for particulars. Universal Detective Agency, 504 Colcord Bld'g. Oklahoma City, Okla.

AGENTS WANTED. Farmer's Directory, Account Book. Exclusive home territory. Easy seller. Big inducements. Particulars Free. Write Naylor 938 Ft. Wayne, Ind.

ALFALFA SEED. This seed has stood the test of many winters in this climate. There is none better. Write for price and sample.

J. L. MAXSON

Buffalo Gap South Dakota

FOR SALE. Creamery in first class condition at a bargain at Crystal, N. D. For further information write to J. S. GESTSON, Sec. CRYSTAL, N. D.

OUCH! HOW IT PULLS

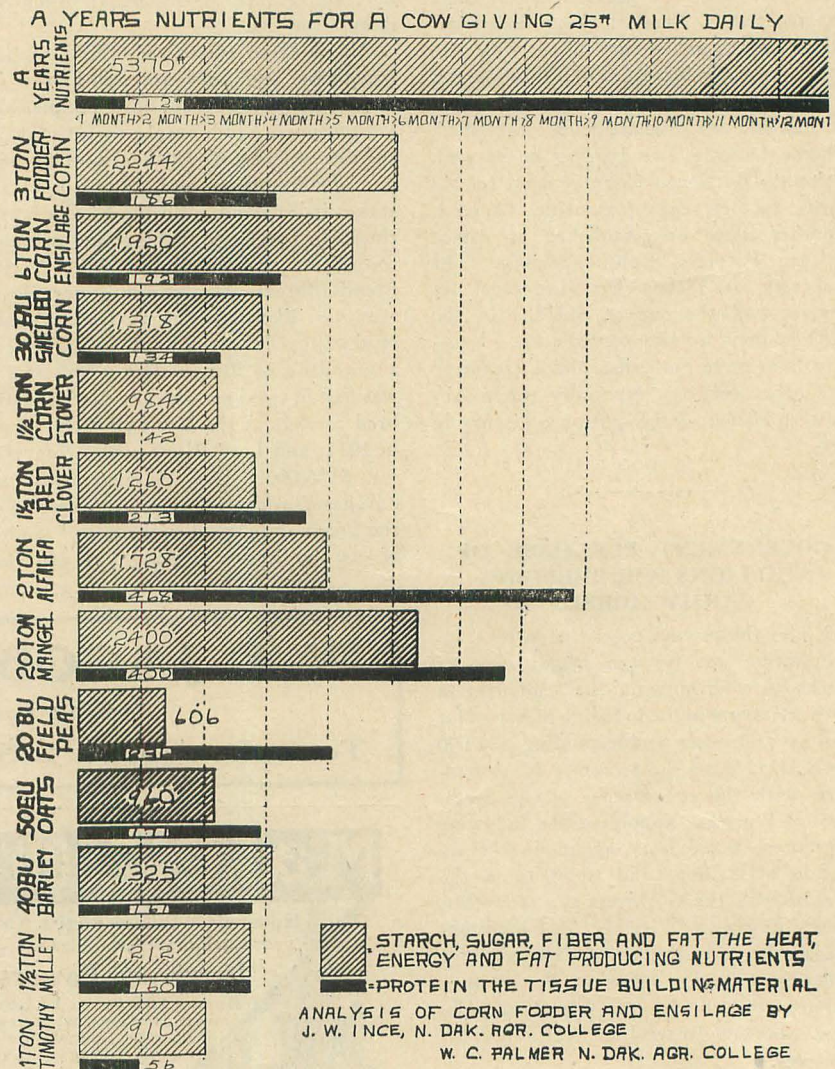
to pay the rent! Why not end it now? I'll help you. Write Land Commissioner D. & I. R. R., R. 344 Wolvin Building, Duluth, Minnesota.

been done. The diagonally shaded columns represent the starch, sugar, fiber, and fat which are the heat, energy, and fat-producing nutrients. The solid black column represents the protein which is the nutrient that builds tissue and replaces worn out tissue. The cow needs about seven times as much of the first as of the second in order to furnish the food that she needs for keeping up her body and for producing milk. If the food nutrients are not fed in about this proportion there will be waste. At the top of the drawing

column longer as corn for instance. The lower part of the chart represents the nutrients in an acre of the different crops; three tons of corn fodder will furnish enough starch, sugar, fiber, and fat to feed the cow five months and protein enough for but three months. Two tons of alfalfa furnishes enough of the first for four months and protein for one eight months. A ton of timothy has enough of the first for two months and protein for one month. The space between each dotted line represents the nutrients for a

Nutrients
to
One Acre

Acres to Feed a Cow One Year



is represented the nutrients that a cow giving 25 pounds of 4% milk daily will require for a year. Notice that both columns are equal in length. This is made possible by making one seven times as wide as the other. The same relation of width of the columns are used below so that when both columns are equal in length the food is balanced. In case one column is longer it indicates that there is an excess of that nutrient as the protein column in alfalfa. This food should be combined with a food that has the other

month. The plan is not to give an exact guide but rather to give a general idea of the comparative value of the different crops. It will also give some idea as to how to combine the foods to form a balanced ration. When the foods are combined so that both columns are equal in length the food is balanced. It must also be kept in mind that variety adds to the value of a food. Another point is that there must be roughage and concentrate as grain in order to furnish the proper bulk. A ration made up of 1 1/2 tons of

clover hay, 50 bushels of oats and 6 tons of corn ensilage would be a balanced ration and sufficient to feed a cow for 9½ months. At the yields given it would take one acre to produce each of these or three acres to feed a cow for nine and one-half months. This ration would be improved by increasing the variety. It will be plain that feeding a ration made up of timothy and corn for instance would not furnish the nutrients that the cow needs, both the timothy and the corn are low in protein, while milk is fairly high in protein. This is a difficult problem. The chart contains a number of the facts that need to be considered in the feeding of the cow.

RAISING HOGS CHEAPLY

W. R. Lanxon, Supt. Hettinger Substation, North Dakota

In raising hogs cheaply it is necessary to begin with the sows. They must be fed well in order to produce a good litter of strong vigorous pigs. Oats is a splendid grain feed. It is a well-balanced food. Corn is not suitable. It is too fattening. Also provide plenty of pure water. Exercise is necessary. This can be provided by feeding the oats on a feeding floor, scattering them thinly. It is not necessary to grind the oats. The sows should be handled so one can go up to them at any time. A good time to have them farrow is about April 1st. A good place is a stall in the horse or cow barn. The time of farrowing can be determined quite exactly. The milk comes into the teats 4 to 6 hours before farrowing. Don't feed the sow for 24 hours after farrowing, but give her slightly warmed water. Then feed some feed like oats and someshorts. When the little pigs are 5 or 6 weeks old begin feeding them some grain feed like ground oats. A good way is to fence off their trough so the sow can't get to it. Wean the pigs when about 12 weeks old.

A good pasture should be provided. For early spring a rye pasture is fine. This can be followed by a mixed pasture as follows: Peas, 2 bushels per acre, barley one bushel and rape 3 to 4 pounds. Some grain should be fed as the pasture alone will not be sufficient. Then plant a patch of squaw corn. The pigs can be turned into this the middle of August. The sows that

are to be used for breeding should not be turned into the corn but keep them on the pasture and feed some grain as oats or shorts. This requires the minimum of labor and makes cheap pork.

An expensive hog house is not necessary.

A straw shed will answer very well. Set up some posts in a circle with an alley leading to the East, put woven wire fence on the posts and some poles on top. Throw the straw over it when threshing. The A-shaped cots are fine for the sows after they have farrowed.

== AUCTION ==

I will sell at auction at Greenview Stock Farm, Steele County, North Dakota on

THURSDAY, MARCH 27, 1913

the following list of pure-bred stock:

25 Head of Registered Shorthorn Cattle
10 Bred & Full Blooded Poland-China Sows

TERMS OF SALE. Cash, bankable paper payable Oct. 1, 1913, drawing 10 per cent interest, will be accepted.

I will meet all trains at Cooperstown and Blabon for those coming by train upon notice by mail, telephone or telegraph.

E. C. BUTLER, Owner, Finley, N. D.

J. A. H. Winsloe, Auctioneer. Assisted by J. W. Wampler, of Bordulac

ST. PAUL UNION STOCKYARDS CO., SOUTH ST. PAUL, MINN. Comparison of Receipts and Shipments of Livestock for February, 1913

Receipts						
Railroads	Cattle	Calves	Hogs	Sheep	Horses	Total Cars
C. R. I. & P.....	332	145	1363	118	.....	34
C. G. W.....	876	257	4317	644	103	107
C. M. & St. P.....	3115	720	13700	875	146	338
M. & St. L.....	1801	459	11432	322	.....	241
C., St. P., M. & O..	3063	680	11706	991	114	396
C. B. & Q.....	614	40	1777	314	.....	51
M. St. P. & S. S. M.	3754	1568	7863	1235	.....	270
Gt. Nor.....	6377	2984	23801	11274	30	669
Nor. Pac.....	3255	899	7238	16456	52	278
St. P. B. & T.....	.....	.....	.....	.....	.....	.....
Driven In.....	606	91	419	170	11	.....
Total.....	23793	7846	89625	32399	456	2384
Increase over 1912	5182	461	.....	4432	.....	.....
Decrease.....	.....	.....	2090	.....	294	260
Jan. 1 to date.....	47198	15128	204878	66738	796	5148
Increase over 1912	8257	2146	.....	2010	.....	.....
Decrease.....	.....	.....	31783	.....	380	.....
Average Wts.....	829	189	228	89	.....	153
Shipments						
C. R. I. & P.....	1464	1	.....	.....	.....	45
C. G. W.....	2543	119	.....	4910	4	97
C. M. & St. P.....	4941	61	12041	8136	111	304
M. & St. L.....	651	11	.....	.....	.....	21
C. St. P., M. & O..	3769	780	140	3456	68	135
C. B. & O.....	1232	13	9215	4581	51	144
M. St. P. & S. S. M.	374	25	.....	878	31	21
Gt. Nor.....	835	64	.....	56	44	30
Nor. Pac.....	832	.....	.....	130	40	36
St. P. B. & T.....	.....	.....	.....	.....	.....	.....
Driven Out.....	119	142	15	114	4	.....
Total.....	17060	1220	21411	22261	353	833
Increase over 1912	7347	340	.....	2375	.....	176
Decrease.....	.....	.....	1983	.....	358	.....
Jan. 1 to date.....	30950	2448	49184	41012	626	1647
Increase over 1912	13013	325	.....	492	.....	286
Decrease.....	.....	.....	10800	.....	519	.....

Oxford Down RAMS

A Few Choice Ones
FOR SALE

Willobank Farm

EASTGATE BROS.

LARIMORE, N. D.

AMONG OUR ADVERTISERS Cont.

By simply sending in the name of the dealer who does not handle "Mayer Honorbilt Shoes" to the F. Mayer Boot & Shoe Company, Milwaukee, Wis., you will receive a large picture, 15x20 inches, of George Washington. It is certainly worth the postal and trouble.

Those who attend the poultry show during the Tri-State Convention were impressed with the fine large exhibit of C. C. Dibley and Son, of Wolverton, Minn. Their ad found elsewhere will give you an idea of the strains exhibited. Their winnings at the Tri-State indicate the quality of their holdings. Their prices will be given on request.

If you are contemplating the erecting of a fence, it will pay you to write to the Keystone Steel & Wire Co. 1017 Industrial St., Peoria, Ill. "Elastic Tension" means life. The two-foot folding rule is well worth the trouble of writing them for their catalog, even if you should not purchase. It is well to keep informed.

The soil in the vicinity of Dassel, Minn., is peculiarly adapted to corn culture, and as a consequence the farmers who have for years grown seed corn have formed themselves into an association for the purpose of supplying their fellow farmers with pure seed at reasonable prices. The fact that last fall over 25,000 bushels was sent to the Minneapolis seed houses alone from that community, is evidence of the popularity of the seed corn raised there. The Collingwood Equity Seed Growers' Association deals direct with the farmers at very reasonable prices. Write them.

Among the very artistic catalogs sent out the present season, is that of the Chicago Flexible Shaft Company. Those who have experienced the delights of the dentist's chair have realized the advantages of the flexible shaft, but few understand to how many uses this wonderful invention may be put. Those who have sheep shearing or horse clipping to do should become acquainted with the machines put out by this firm. The Dental Float Attachment will keep a horse's teeth in good shape. The price of the outfit varies from \$7.50 to \$100. Address Chicago Flexible Shaft Company, La Salle Ave. N., Chicago, Ill.

From a \$20,000 trade in 1906 the business of the Gurney Seed and Nursery Company, of Yankton, S. D., has so grown that the sales of 1912 were in excess of \$250,000 to over 25,000 customers. Additional land has been purchased, new build-

ings have been erected and every effort made to take care of the enormous sales anticipated the present season.

One of their catalogs should be in the hands of every farmer. Every season adds to the popularity and business efficiency of this firm. The children for several generations have practically lived amid pure-bred seeds and hardy nursery stock. Just as the knowledge of the business has been handed down from genera-

tion to generation, so has the honesty and business integrity been transmitted from son to son.

There will be many exhibits at state and county fairs made by patrons of this house, for the company is very liberal with its premiums. For this reason, too, it might be well to write for the catalog, since this contains the premiums offer for 1913. A postal addressed to the Gurney Seed and Nursery Company, Box 11, Yankton, S. D. will bring the catalog.



Make the Horse Glad and Eager for Work

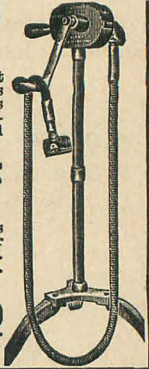
The way to do it is to clip him before you put him at the spring work. Take off his winter coat that holds the wet sweat and dirt. He'll get more good from his feed, look better, rest better and give you better service in every way. The best and most generally used clipper is the

Stewart Ball - Bearing Clipping Machine

Insist on having the Stewart, the machine that turns easier, clips faster and closer and stays sharp longer than any other. Gears are all file hard and cut from solid steel bar. They are enclosed, protected and run in oil, little friction, little wear. Has six feet of new style easy running flexible shaft and the celebrated Stewart single tension clipping head, highest grade. Get one from your dealer or send \$2 and will ship C. O. D. for balance. Money and transportation charges back if not satisfied.

CHICAGO FLEXIBLE SHAFT CO., LaSalle Ave., N., Chicago
Write for complete new catalog of horse clipping and sheep shearing machines.

PRICE \$7.50



ST. PAUL UNION STOCKYARDS CO., SOUTH ST. PAUL, MINN.

Comparison of the Origin and Disposition of Livestock for February, 1913
Origin of Livestock Received

States	Cattle	Calves	Hogs	Sheep	Horses	Total Cars
Minnesota.....	17186	6507	69613	7012	52	1734
Wisconsin.....	1932	711	5688	256	.....	155
Iowa.....	6	1	699	.....	123	17
Far South.....	.....	.....	.....	.....	63	3
South Dakota.....	760	114	4074	312	61	89
North Dakota....	3343	493	9390	2816	62	266
Montana.....	224	20	161	22003	25	102
Far West.....	.....	.....	.....	.....	70	3
Manitoba & N. W. T.....	.....	.....	.....	.....	.....	.....
Far East.....	342	.....	.....	.....	.....	15
Returned.....	.....	.....	.....	.....	.....	.....
Totals.....	23793	7846	89625	32399	456	2384

Disposition of Livestock

Sol St. Paul P'r's..	7655	4712	67914	10095	.....	.....
City & State Butch	446	142	140	421	.....	21
Outside Packers...	.....	320	21256	523	.....	197
Minnesota.....	3357	264	15	712	46	112
Wisconsin.....	1248	15	.....	108	89	51
Iowa.....	4772	378	.....	204	.....	148
Nebraska.....	314	70	.....	.....	.....	7
Kansas & Missouri	292	.....	.....	.....	.....	6
South Dakota.....	2743	10	.....	.....	.....	72
North Dakota....	249	3	.....	.....	23	8
Montana & West..	368	.....	.....	.....	.....	9
Far South.....	.....	.....	.....	.....	.....	.....
Manitoba & N. W. T.	342	.....	.....	.....	36	17
Mich. & E. Can...	.....	.....	.....	.....	.....	.....
Chicago.....	1151	1	.....	20293	.....	124
Ills. (ex Chicago)..	1731	17	.....	.....	21	54
Eastern Points....	.....	.....	.....	.....	138	6
Returned.....	47	.....	.....	.....	.....	1
Totals.....	17060	1220	21411	22261	353	833

Mention the NORTH DAKOTA FARMER

When Writing Advertisers

Poultry Department

POULTRY NOTES

George Hausmann, Hillsboro, N. D.

The hatching season is upon us. Get busy and have those eggs ordered or see to it that that hen is set.

If you are contemplating to send for eggs, order them now, so that you know positively that you will get the eggs just when wanted. This is what is meant by "booking your order."

If, however, you do not just know yet whether you intend to raise purebred fowls, it will be well to think it over again. It means both pleasure and good profit to you. The prices of hatching eggs are such that they are within reach of anybody.

In selecting your hatching eggs, see to it that they are of medium size and as uniform as possible. Avoid all odd-shape eggs, also those that are rough or ridgy on the ends.

Move your setting hen at night, and chances are, if she is broody, she will keep the nest you put her on; whereas, if changed during the day time she is very apt not to act.

Dust your hen thoroly before setting her, with coarse powder. In case of head lice, rub on a little lard with a few drops of carbolic acid added to it. Repeat the dusting occasionally.

A nest which has a good lot of dirt in the bottom of it, with little cover of straw over it makes a better nest than one out of straw alone.

Oyster shells, dried bone and grit ought to be before the hens now as well as any other time.

Diseased birds, or those that have had any disease during the winter ought not to be used for breeders.

When you have a good breed of birds, and are after success, you will do well to feed the male birds a little extra. This little extra work is a good paying proposition.

THE EVOLUTION OF THE POULTRYMAN Article I

Unconscious Development

Robert A. Harrison, David City, Nebr.

Complicated devices are the bane of the practical chicken raiser's life. Simplified

and effective fixtures which may be home-made are to prevail eventually thru common knowledge and the unconscious development of the evolving poultryman.

With four dozen chicks handed across my back yard fence at David City, Nebraska, I began a transmigration. The beginning was easy, the process long and unfinished. I had no brooder, but with a knowledge of needs there evolved from the unfinished material of other things an effective hover, and not one of the forty-eight chicks was lost.

A satisfactory fence was needed, so with two strips of eighteen-inch wire mesh, a fence was made which is still serving for the matured fowl. One strip was set perpendicularly, and the other was placed from the top at an angle of about forty-five degrees. The result was a surprise; the cost of fence cut in two.

Feed was going to waste in filth, or was lost to the birds and mice. Again a necessity was brought forth by means at the hand of every chicken raiser. The dry mash-hopper was made closed, to open only by means of a little wooden lever when the chicken stepped upon the board platform to feed. This hopper is also non-wasting and does not choke-up. It can be made by any one who can drive a nail.

A cracker-box trap with a drop-door next the bottom at one side, was placed in a tree for the English sparrows. A little stick perch within loosens the door after the birds have entered to take possession of the oats on the bottom of the box. This method is effective, and is simple enough to be made in every yard where the sparrow is a pest.

Water was spilled and mixed with filth, which checked the vitalizing processes in the developing chicks. Two tin cans of unequal size and a tin plate solved the problem of a "top-pour water fountain," and it keeps water cool in summer, with no menacing patent awaiting imitation in every poultry yard.

To protect crowding in the box-coop of the now feathering flock, an incline was fixed with boards on the floor. Protection from vermin was provided by a slot door, under the broad, low chicken porch, which served as a retreat in threatening weather.

With a knowledge of what food makes a growing chicken grow more, food was kept before the flock, and at eight weeks the larger cockerels weighed just 36 ounces, or two and a fourth pounds apiece.

Problems multiply with the seasons of the year. Frost came, and eggs were expected. Nitrogenous food vanished, hope diminished, hope vanished. The garden became barren—tho the grain box was full. "Green Food" was the daily hymn of the "yet-to-be layer." How could the foliage of the soil flourish without soil, and yet without the artificial heat of the menacing and troublesome lamp? That was the question, until the stored-up heat and naturally disseminated moisture of heated water was made to grow sprouting grain in cellar and woodshed at zero weather. What a relief, and what a long stride for the poultryman.

The undesirable loafers, drones, were present among the now laying pullets. Yet to find them was the problem. A trigger on the trap door of the nest was possible;—then the faithful hen could be found in the act of service. But time was an item to be considered. So a box with doors at either end was selected from the lumber reserve, and made to work automatically, receiving the hen at one end and later passing her to the rear of the laying

ENTERPRISE POULTRY YARDS

BARRED ROCKS OF QUALITY

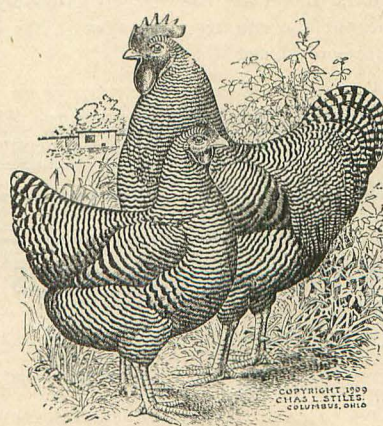
I am now offering for sale 27 cockerels from

\$2.00 to \$15.00

These birds are top notchers, bred from the best stock, and grandsired by "Masterpiece," the \$500 bird. 25 per cent discount to members of the Poultry Association.

Mating catalog for 1913 now out. A postal will get it.

EGGS FOR HATCHING



E. W. WILSON

- -

LAMOURE, N. DAK.

floor to begin at the process of egg-making. In this simple way the greatest loss in egg-production is prevented. A few boards, plus a spring, four hinges, nails and the weight of the laying hen, is to be the universal means of knowing "which hen layed the egg."

What one back-yard poultryman has done other are doing with hammer and saw, and little or no expense. It will be a pleasure to reply to reasonable inquiries regarding these home-made devices.

ARE PHENOMINAL RECORDS AD-VISABLE?

Michael K. Boyer,

Naturally, poultry farmers are ambitious; they want to get all the good out of their hens possible. They have installed trap nests and are breeding only such hens as give big records. First they arrived at the 200-egg strain, and now they want to make it 50 eggs more.

Prolificacy, coupled with stamina, is a worthy object to work for, but prolificacy should never be encouraged when it is known to jeopardize hardiness.

When the aim is to establish a 200-egg strain—that is, have the flock average that number of eggs in twelve months—a number of individual layers will be compelled to lay as many as 250 eggs, or even more, to make up for those which have not reached the 200 mark.

Of late I notice a tendency to go still higher, some advocating a 250-egg strain. That would make it almost necessary to have some hens lay 300 eggs in one year.

What will be the outcome of all this high speed? It will mean a future generation of weak stock. If all the energies are spent one direction, what will there be left of stamina?

It is far safer to work for 150 eggs a year as an average than to go higher. It is possible for hens properly bred and cared for, to maintain good health and vigor while aiming at 150 as an average.

The American breeds of today are a strong, hardy race, and famous for good laying and good table qualities. Twenty years ago they were of a more or less delicate nature, and rather indifferent layers. What was the reason? It seemed to be the idea to breed solely for feather, shape and other show room requirements, regardless of any other qualifications. The

fanciers of today recognize the value of utility and make that the foundation stone.

Now if the utility men are going to sacrifice everything to secure great laying, they will not only inbreed, but will destroy the breeds entirely, doing more damage than did the fanciers of a score of years ago.

If every aim is to be for phenomenal egg records, what will become of our meat supply? Surely an unnatural flow of eggs will not only cripple fertility, but will also make weak and puny chicks.

Have good, strong, vigorous hens as the foundation. Use trap nests, and each year pick out the best layers among this strong, vigorous stock, mating to males of equally good condition—but never inbreed—and then gradually aim for a figure that will leave no bad effects.

In the mad rush for these great egg records, the stock is forced by condiments, heavy feeding of meat, and any and everything of a stimulating nature. Such feeding will bring the eggs, and it will also bring on early decline.

The method generally adopted by those ambitious for big results, is to hatch the eggs from one or more phenomenal layers, and mate up the offspring—brother with sisters—and repeating for two or three years. Is there a more sure way of deteriorating stock than that?

The rule should be, never inbreed, each year select the best layers, and feed material that will make the eggs, but no stimulant should be used that will force them beyond the intention of nature.

POULTRY POINTERS

Collingwood says there is no animal mixture under the sun so intricate, so compact, so full of power and force as the egg.

The color of the eggs sold today are considerably darker than they averaged 30 years ago, all of which proves that Asiatic Blood has been largely introduced thruout the country, and that it has its effect on the egg.

Silver-Laced Wyandottes, Thoroughbred, Wide Open Laced, Big Utility, Winter Laying Birds. Bred for Business. Eggs for Hatching: 15, \$1.50; 30, \$2.75; 50, \$4.00; 100, \$7.00. Satisfaction Guaranteed.
Anthony Elm - - - Lansford, N. Dak.

50 Best Paying Varieties Pure-Bred Chickens, Ducks, Geese, Turkeys, Eggs, Dogs and Incubators. All at Low Prices. Send 4c. for my Book which gives reliable information worth many dollars to you
W. A. WEBER, Box 926 Mankato, Minn.



55 BREEDS Pure-Bred Chickens, Ducks, Geese, Turkeys, also Incubators, Supplies, and Collie Dogs. Send 4c for large Poultry book Incubator Catalog and Price List.
H. H. HINIKER, Box 30 Mankato, Minn.

FOR SALE—Full-blooded Indian Runner Drakes. Eggs in season. Mrs. F. D. Dayle, Hope, N. D.

EGGS, from Pure Bred Barred Plymouth Rocks. Prize winners and good layers. \$1.50 for 15; \$5.00 for 100.
MRS. WM. MEAD MAPLETON, MINN

S. C. White Leghorn Cockerels \$1 each.
Oscar Anderson R. R. No. 2 Edmore, N. D.

FOR SALE. Rose Comb Rhode Island Red Cockerels.
IRA HEIDLEBAUGH, Pleasant Lake, N. D.

ELEVEN YEARS A BREEDER
Pure-bred poultry: White Wyandottes, Toulouse Geese, Bourbon Red Turkeys and Pearl Guineas. Stock for sale. Write me your wants.
E. A. TOW, R. R. 3 LISBON, N. D.

EGGS FOR HATCHING from pure bred Buff Oringtons. \$1.50 for 15; \$2.50 for 30.
F. M. PEZALLA, CAYUGA, N. D.

BUFF WYANDOTTE EGGS for hatching. Fowls for sale. Also twelve breeds of Fancy Pigeons.
M. B. NOBLE, Hillsboro, N. Dak.

BARRED ROCKS
Bred to Lay and Win
Won all first at Fargo, N. D. State Show, 1906, 1907, 1908, 1909 and 1911. Stock at reasonable prices
PETERSON BROS. Harwood, N. D.

HAUSMANN POULTRY FARM
Breeder of W. Wyandottes and S. C. W. Leghorns
Hillsboro, - North Dakota

EGGS FOR HATCHING. White Plymouth Rocks (Fishels Strain) \$5 per 15. I have the Best in the Northwest. No exceptions. Indian Runner Ducks from Choice High Bred Stock, \$2.50 per 11. Canadian Wild Geese, \$1 per egg.
C. H. MCGEE Oriska, N. Dak.

WHITE WYANDOTTES. If you want eggs from an early maturing, heavy laying, prize winning strain of White Wyandottes write me. I am developing a special laying strain by use of the trap nest. Prices reasonable. Write
M. C. JAMES, Valley City, N. D.

MAKE YOUR HENS LAY MORE EGGS
I have a method that will make your hens lay every day; it never fails. Write for it. 2c stamp.
MRS. B. F. WILCOXON, North Platte, Neb., Dept. 8

FOR SALE. M. B. Turkey Toms, raised from our Diploma Stock, \$5.00 and up; also Eggs from 26 varieties poultry. Catalog free.
L. GULDEN, Osakis, Minn.

BARRED ROCKS

Let me have a chance to supply you with some of the choicest birds in the state. I have other strains also. Prices according to the individual. Eggs in season.

CARL FLEMING - LISBON, N. DAK.

WE DUPLICATE ALL INFERTILE EGGS

White and Columbia Wyandottes, Single Comb White Leghorns, and Light Brahmas. We use trap nests. In business 30 years. Brahma eggs, \$3 for 15; \$5 for 30. The other varieties, \$2 for 15; \$5 for 50; \$10 for 100. Address,

Michael K. Boyer, Box 17 - Hammonton, New Jersey

KARL THOMTE ROSE COMB RHODE ISLAND REDS

Breeder of - - -

LISBON, NORTH DAKOTA

I won 1st Hen, 1st Pen, 2nd Cock, 3rd and 4th Pullet at State Poultry Show, Fargo, N. D. January 10-17, 1913.

Will send stock on approval. Let me hear from you early. February 1st I got 46 eggs from 75 pullets after three days of 20-below-0 weather. No artificial heat used.

Hens and pullets, each.....\$1.00 to \$2.50
Cocks and cockerels, each.....\$1.50 to \$5.00
Pens of six birds.....\$10.00 up
Trios.....\$5.00 up

1st Pen.....\$2.00 for 15 or \$6.00 for 50
2nd Pen.....\$1.50 for 15 or \$4.50 for 50
3rd Pen \$1.00 for 15, or \$3.00 for 50; \$5.00 for 100

Juiciness in broilers is due to pure food and rapid maturity.

White hellebore dissolved in water and sprinkled on the roosts, is sure death to lice.

In France they mix spices and herbs with the food given to fattening poultry, which are said to impart a delicious flavor to the meat.

In organic form the egg contains 650 grains of water, 125 grains fat, 108 grains of lime, 80 grains albumen, 26 grains sugar, and 10 grains of ash.

Fowls intended to be killed should not only be confined in a coop for 24 hours without food, but should be supplied with plenty of drinking water, which aids in cleansing the intestines.

For flavor and delicacy of flesh, there is nothing in the line of domestic water fowl to the Cayuga duck, but it has never become popular in this country on account of its black plumage.

As a broiler cannot be secured on free range, and as it can attain the required weight in a given time only by a systematic feeding of pure foods, it carries with it a reputation and demand on account of its juiciness, tenderness and purity.

If a drawn carcass has any distance to go, it may mould inside; or if a fly does not "blow" in it, there is a large exposed surface hidden from sight, which may become infected by some means during transit. If mouldy, sour, or fly blown it is no longer salable, at least for any thing like a fair price, and it is not safe for food.

Eggs may differ materially in color, and yet not differ much in nutriment. Again, they may differ largely in nutriment, when for instance, they are neglected or poorly fed or when they eat filth, damaged grain or tainted meat. The crop and gizzard of

a hen cannot transform impure food into pure products. The real value of an egg for food lies inside the shell, and is not indicated by color of shell.

A gentlemen remarked the other day in a restaurant: "I don't eat eggs now. They are not good. Thin, pale yolks show it." Another said in reply: "Well, I'll order soft boiled eggs, for I know that it is grass and green weeds that make the yolks that very dark color they have later on, and it is the good grain food they have to eat now to make hens lay that makes the yolks so pale. I've raised chickens and know." There are city people to whom the taste of a genuine fresh egg would be a revelation.

Very many imagine white fowls to be delicate, unable to endure cold, and therefore, unfitted for the climate of the western States, and the Canadas, but instead to be recommended for the Southern States. Nature refutes this in giving the richest, darkest, deepest tints for the tropics, and in darkening the plumage of the migratory flyers preparatory to their Southern journey, and vice-versa, until in the extreme North and South, and the more to be marked as the cold increases, we find either White or an approach to it in neutral tints prevailing.

Golden and Columbian Wyandotte's Eggs
for hatching, \$2.50 per 15.
W. E. BROWN Paynesville, Minn.



125 Egg Incubator and Brooder Both For \$10

Why pay more than our price? If ordered together we send both machines for only \$10.00, and pay freight charges East of Rockies. Hot water, double walls, dead air space between, double glass doors, copper tanks and boilers, self-regulating. Nursery under egg tray. Incubator and Brooder shipped complete with thermometers, lamps, egg-testers—ready to use when you get them. Five year guarantee—30 days trial. Incubators finished in natural colors showing the high grade California Redwood lumber used—not painted to cover inferior material. If you will compare our machines with others offered at anywhere near our price, we will feel sure of your order. Don't buy until you do this—you'll save money—it pays to investigate before you buy. Send for FREE catalog today, or send in your order and save time. Money back if not satisfied. Write us today. Don't delay. (12) **WISCONSIN INCUBATOR CO., Box 68, Racine, Wis.**

1900

C. C. DIBLEY & SON

1913

Barred Plymouth Rocks
White Plymouth Rocks

BREED THE BEST
Light Brahmas
Buff Wyandottes

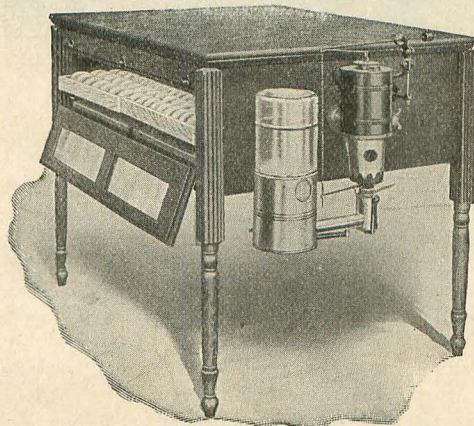
Single Comb Rhode Island Reds
Columbian Wyandottes

Look up our winning in Poultry Herald, February and March numbers.

Stock and Eggs for Sale

WOLVERTON,

MINNESOTA, R. R. 1



The Blue-Ribbon Incubator of Quality -

If you want Success in the poultry business, the first and greatest thing is a good Incubator. You get this when you buy a Blue Ribbon, built of the best white pine, strong and neat. First class heating system made of pure lake-copper, which never rusts. Regulator on side of machine out of the way. Top clear like a table. Chick tray in nursery. Double walls with dead air space. Extra thick insulation in lid and a lot more strong features not found in other machines. In fact the Blue Ribbon is a Quality Machine. No thin iron—no paste-board—no knotty lumber—no inferior stuff used. Goes out ready to start. You don't have to put 100 pieces together as you do with some others.

It is an Automatic Incubator, as it has an automatic lamp, regulator, ventilation, moisture and heating system. It is the incubator that hatches good, strong, healthy chicks with less labor and less expense than any other incubator on the market.

We also have purebred chickens, including Dark Brahmas; Black, Buff, White, and Partridge Cochins; White Leghorns; S. S. Hamburgs; Blue Andalusians; W. F. B. Spanish; Pekin and Rouen Ducks; Embden and Toulouse Geese; M. B. Turkeys, and White Holland Turkeys. Eggs for hatching. Write for free catalogue.

C. H. Ahrens

Fargo, N. D.

EGGS FOR HATCHING
From Land and Water Fowls. Greatest Egg layers. Biggest money-making strains. Prices Low. Don't Buy An Egg till you see our Circular, mailed for 2 cents. Write today. Farmer's Poultry Co. Mankato, Minn.

EGGS FOR HATCHING from all varieties. Rocks, Brahmas, Wyandottes, Leghorns, Orpingtons, Bantams, Guineas, Geese, Turkeys, Ducks. All Pure-bred stock. Eggs fresh, fertile packed in light baskets. Write us.

ENVILLA STOCK FARM
Cogswell North Dakota

Hatching Eggs and Breeding Stock

Heavy-Laying, Prize-Winning Birds

Buff Orpingtons—White, Buff and Barred Rocks—White, Buff, Silver, Golden, Columbian and Hadaway strain of Partridge Wyandottes
O. A. Barton, Valley City, N.D.

WHITE ORPINGTON
and

INDIAN RUNNER DUCK EGGS

\$6 per hundred. Turkey and Geese eggs, \$1.75 per setting. We breed all leading varieties of standard poultry. Plymouth Rocks are our leaders. Stock of highest quality at let-live prices.

Write for descriptive circular.
Address, W. F. Holcomb, Mgr., Nebraska Poultry Co., Clay Center, Nebraska.

School and Home

OUR TRIP TO THE BOYS' AND GIRLS' INSTITUTE

By Edna B. Wiltse, Lisbon, N. D.

The eight delegates from Ransom County to the Third Annual North Dakota Boys' and Girls' Institute arrived in Fargo on Monday evening.

The four boys and four girls were chaperoned by "Uncle Will." The train was late, and we did not arrive in the city until about eight o'clock in the evening. When we got off the cars it was snowing, and very cold.

As it was too late to go to a hotel for supper, we were taken directly to a restaurant.

When we had eaten supper, we went to the Viking Hotel, where "Uncle Will"

buildings. We had our picture taken many times during our stay in Fargo.

Then we all went to the armory to listen to some speeches. There we were addressed by President Worst of the Agricultural College and by Professor Randlett. They welcomed us to the college, and told us something of what our lessons were to be. Each boy and girl was given a program of the week.

Professor Martin then talked to us about dairying. Professor Waldron next gave us some useful hints on small-fruit raising. After that we had a grand march, and then went to dinner.

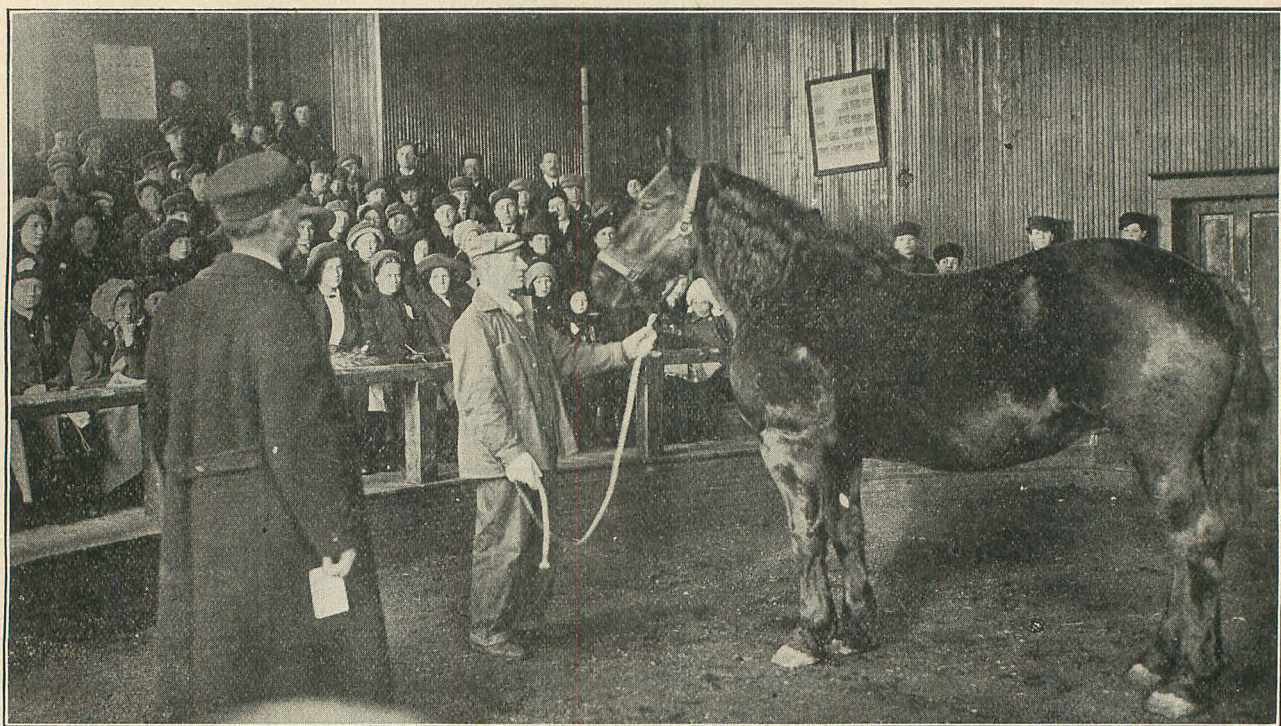
We took dinner and supper at the dormitory every day. Two-hundred and forty persons can be seated at the tables

The remainder of the afternoon was taken up by inspection tours. We were conducted over all the college grounds and buildings. We saw so many interesting things in one afternoon that we wondered what there could be left to see. But every day for a week we saw a great many new things.

The college grounds are very pretty, altho in summer they must be much more beautiful than at this time of year.

At the entrance to the college grounds is being built an immense iron gate, with massive stone pillars of solid masonry on each side. On the right of this gate is a smaller one, exactly like the first in construction. This smaller gate leads to the armory and dormitory. Altogether, this entrance makes a very picturesque appearance.

We visited the greenhouse, which was especially interesting. There were several very strange plants there. Three banana plantains thrived well in the almost tropical temperature of the green-



Lecture on the Horse by Prof. J. H. Shepperd, before the Boys' and Girls' Institute

had engaged rooms for us. Afterward, "Uncle Will" took us to the theater, where we greatly enjoyed the play.

Every morning during our stay we breakfasted at the hotel and at eighty-three, took the car for the Agricultural College, about a mile out of town.

At the college we met boys and girls from twenty-three different counties. There were one hundred and fifteen of us.

A photograph was first taken of all the boys and girls of the Institute. We stood in a group on the steps of one of the college

in the dining-room. How we liked to take our meals in that great, high-ceiled room!

Many parents had come with their children to the institute. These fathers and mothers seemed to enjoy their visit as thoroly as did the young people.

The first part of the afternoon, from one o'clock to three-thirty, was mostly spent in taking gymnastic exercises.

The girls played in the gymnasium, and the boys in the armory. Miss Dynes supervised the girls, while Professor Miller had charge of the boys.

house. We greatly enjoyed our visit to this indoor garden.

In some of the natural history rooms were a great many stuffed animals, birds and fishes.

We examined the libraries, the physiology rooms, chemical rooms, mechanics' rooms, manual-training rooms, art and music rooms.

We explored the dark-room, and learned something of photography.

We girls were all very much interested in the kitchen, where the college girls learn to

cook. Each girl has a small blue and white enameled cabinet, and a certain number of cooking utensils. This kitchen is, indeed, a model of neatness.

In the room where the band rehearsals are held, is a couple of kettle-drums, which are said to be the only genuine kettle-drums in North Dakota. When put together, they form a perfect ball. These drums were hammered from a piece of copper into their present shape. The drumhead can be either loosened or tightened by use of a small lever on the side. The tone of these unique instruments is very clear and mellow.

There were several of the most cunning little deer in the college park.

After supper Tuesday evening we all gathered at the armory, where we enjoyed a delightful college entertainment.

Wednesday morning Miss Dynes talked to us girls about household affairs. Professor Martin talked to the boys about dairying, and Professor Doneghue about crop rotation. Afterward, Mrs. Randlett spoke to us all, both girls and boys, on poultry.

Thursday morning we all went to the stable classroom, where we were given a lesson in stock-judging. Professor Shepherd talked interestingly about horses. In the afternoon Professor Dynes gave us all a talk on corn.

That evening a delightful social was given us by the college. It was held in the armory, which was the boys' gymnasium, lecture hall and drawing-room, all

in one. The social hours were spent in playing games. About ten o'clock refreshments were served. All left for the hotel declaring that they had enjoyed the evening, and grateful to those who had given us this happy time.

Friday morning we girls were given our usual lessons in household affairs. We greatly enjoyed these lectures, and were given many valuable suggestions. Afterward, Professor Keene told us all about moving-pictures. Later, we all spent an hour in corn-judging.

As Friday was our last day in Fargo, we were all anxious to visit the city. The young people were flocking about the streets, eager to see all the sights. Many of us took the opportunity to visit the Forum building, and see the great press at work.

Friday afternoon the one hundred and fifteen young people were taken to the Orpheum Theater. All enjoyed a laughable show, which was staged especially for children.

The antics of little Jumbo, the baby elephant, and the Great Napoleon, the huge monkey, were very amusing. Peals of laughter rang thru the house when Jumbo and Napoleon sat at a table and ate real food. The whole show was thoroly enjoyed by all. It is but an instance of the great kindness shown us by the faculty, the Orpheum Theater and by outsiders.

We then returned to the armory, where we listened to some speeches. President Worst talked to us, and advised the boys

never to leave the farm for the city. The President of the Institute read us his well-prepared farewell address. Then "Uncle Will" talked to us, and we answered him with the yell he had taught us:

D-I-Di-versify!

Corn, alfalfa, pigs and rye;

Rap-a-tap, tap-a-tap; who are we?

Winners at the grand A. C.

Friday evening we were given a splendid banquet by the college, in the Ceres Hall. It was the farewell dinner, and the great dining-room was crowded with visitors. At eight o'clock we gathered in the armory, where we enjoyed a delightful college entertainment.

That evening we said good-bye to the college, and all those there who had helped to make our week a success.

We are happy to say that there was not a single accident during the week to mar our pleasure.

We will remember the valuable lessons we learned at the college, and apply them to practical use.

Saturday morning we left the city, resolving to try to come again next year. We wish that every North Dakota boy and girl could go to the A. C. and have as fine a time as we had.

We are grateful to the faculty for the instruction and delightful time they gave us. We thank the commercial clubs for the help they have given us; and the chaperones for their part in making our week a success. We are all grateful to the citizens of Fargo, who have shown us



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Publisher THE HIGHWAY MAGAZINE,

534 Walnut St., Cincinnati, Ohio

much kindness. We, of Ransom County, extend our heartiest thanks to "Uncle Will" for his many favors, and for his part in making our week in Fargo so delightful.

CONVENIENCES FOR WASH-DAY

Grace Linder, Dep't Home Economics,
Agricultural College, N. D.

Equipment and system greatly reduce the labor required to do any kind of work. The household washing often becomes a disagreeable and irksome task because of the lack of conveniences in performing the day's work. If, however, some of the labor-saving devices and conveniences are provided, wash-day will not be looked upon with so much disfavor.

Where it is necessary to employ outside labor for laundry work it is well worth while to count the cost of this outside labor as opposed to that of installing power to do the work. It is economy to install some kind of power with which to drive the machinery of a household, such as a washing-machine and wringer. With a washing-machine run by a motor, the housewife is able to carry on the regular routine of work and do a large washing without inconvenience in the household. However, if it is not possible to have the washing machine operated by power, a machine operated by hand will save both time and labor. The time necessary to wash one or two garments is sufficient to wash many if a machine is used. Furthermore, large garments are more easily handled in this way than in a tub and over a wash-board. The machine may take the place of one tub, and clothes may be soaked, washed or rinsed in it.

A good wringer should be a part of the equipment and should receive care both when in use and out of use. When not in use, the pressure on the rollers should be released by turning the screws at the top of the wringer.

It is not well to depend upon buckets and pans to receive the clothes as they come from the wringer. A clothes basket is inexpensive and should be provided. It saves both time and labor in handling the clothes.

For sanitary reasons and for convenience also, a laundry bag or hamper should be in a convenient place to receive all soiled clothes as they are taken from the body. Clothes absorb the impurities thrown off by the skin, therefore it is unsafe to allow soiled clothes to be thrown loosely about in different parts of the house. Too much emphasis can not be made regarding a particular bag or hamper in which to place soiled clothes. By this practice much time will be saved when the day arrives for washing, and Mary or John will not be disappointed because some of the clothes were overlooked in the gathering of them.

A simple device (sometimes called a pounder) made of non-rustable material to which is attached a handle helps greatly in washing. It cleanses by suction, forcing the water in and out of the clothes, and it is worked up and down in the boiler or tub. It is especially well adapted to the washing of woollens and blankets, and is inexpensive.

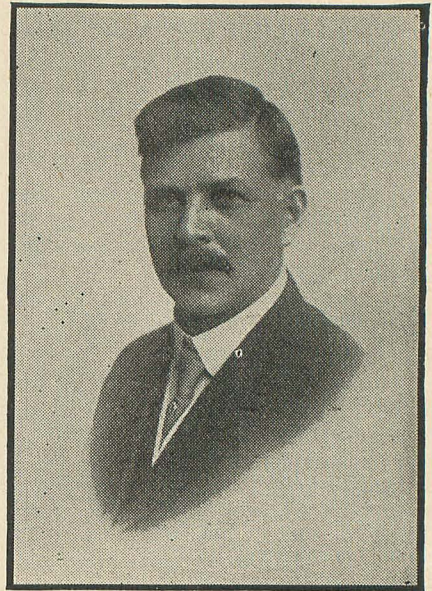
Searching for clothes-pins will be unnecessary if they are kept in a clothes-pin apron. Such an apron is made of ticking or any strong material and may have one pocket or two pockets across the entire width of it in which to place the pins. The apron is worn when hanging up the clothes and when taking them from the line.

Just a word about the bench upon which the tubs are placed. If a bench is made for the purpose of holding tubs when washing, and if it is of the proper height, washing will not be such a back breaking task as many find it to be. The bench is usually too low, because often a box or kitchen-chair is made to do duty on this day. A bench 24 inches high will be found very satisfactory for the woman of average height. Women are too prone to use the thing at hand or make anything do, instead of getting the thing which is best suited for that particular kind of work.

A soap which is suitable for one fabric may not be suitable for another, therefore it is good practice to keep more than one kind of soap on hand. Any good naptha soap may be used when soaking clothes. Use naptha soap in cold water. A milk soap should be used for washing woollens. Strong alkali soaps are injurious to them. Strong soaps should not be used for colored clothes, but may be used for white goods.

THE MOTOR CAR MAKES FARM LIFE ATTRACTIVE

By R. E. Olds, President Reo Motor Car Company



R. E. Olds

There must be some good reason for the wide use which the thrifty and practical farmers are making of automobiles throughout the country, and more especially, of



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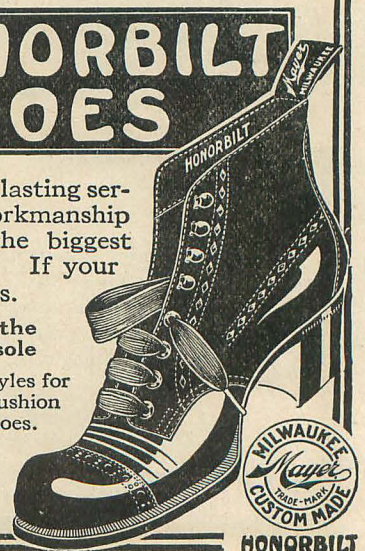
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WARNING—Be sure and look for the Mayer name and trade mark on the sole

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FREE—Send name of dealer who does not handle Mayer Honorbilt Shoes and we will send you free, postpaid, a handsome picture, size 15x11, of George or Martha Washington.

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the high-quality, low-priced makes. The motor car evidently must pay the farmer good dividends on his investment for he is not given to spending his money foolishly. He must get a goodly measure of results by way of saving time, labor and money with his motor car. He and his family must be getting much pleasure, comfort and satisfaction with the automobile so long as the use of power vehicles continues to increase so remarkably everywhere among farmers.

One of our live and enthusiastic farmer patrons recently wrote us how his automobile furnished the power for blowing hay over 100 feet up into a hay mow where one may now easily do more than what three men and two horses formerly did. This he does by jacking up the rear axle and harnessing the motor to one of his old discarded blowers. I can pretty nearly realize the joy and satisfaction which came to this man as a result of saving much time, labor and money with the power plant of his motor car while utilizing a discarded farm implement.

Another farmer says that he markets all of his wheat and corn with his car by the aid of a trailer. Besides, he now is able to get to the city much oftener and sell his product direct without the aid of the middleman—an important factor in reducing the cost of living to the consumer.

What is even of greater importance, he has happily solved the problem of how to keep his boys and girls contented on the farm. Under such conditions they would never swap the farm for the shop while their city cousins trudged back and forth from their work, either afoot or as straphangers, while working for a scant living salary.

Then I recall another farmer who puts his car to many practical uses on the farm besides running business errands with it. When the ground is dry and hard he hitches his automobile to a disc plow and cultivates his large orchard in six hours which formerly required from 12 to 18 hours with three horses. He also harnesses his motor power to his corn-sheller and thresher and when the soil is in proper condition he plows, cultivates and sows grain with his car, keeping a horse or two in reserve for emergency only. It is really surprising how many uses a car may be put to on a farm with the exercise of a little mechanical ingenuity.

It is very gratifying to me that hundreds of the cars which I built in 1905, and prior thereto, are still doing yeoman service today. That is due to two things, namely: good construction and good care on the part of the owner and driver.

As the secret of long life in man lies in good food and proper care, so with a high-

quality, reliable car. Give it the best of gasoline, oil and grease, combined with careful driving and reasonable protection against the elements and against the extremes of heat and cold, barring tires, a car of known honesty and reliability of construction should last a farmer from six to ten years.

The farmer's life is, at the best, frequently full of drudgery and monotony; even those who count their acres by the hundreds, if they are making a success in



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(36)

their line, cannot get rid of a certain amount of monotony, and it is this monotonous day in and day out grind, more than anything else, that causes the farmer to break down in middle life. His wife at forty often looks as old as her city sister of fifty-five, while his children drift cityward, where they invariably live up more than they can earn.

To the modern farmer these days are passing. He realizes that he must not put all his dividends back into working capital, such as land, stock, etc., and leave a great fortune for his city children to law over. But, if he takes more than a narrow interest in his family he finds that he must make the farm home as near ideal as possible, and he puts his money into modern living just as his city brother is doing and with his modern home equipment, there must follow the motor car.

He finds that hired help, both on the farm and in the home, are less difficult to get and keep, and that they will take more interest in their work if he does not forget them once in a while in his "spins," and also his less fortunate neighbor in this world's goods seems to have a better opinion of him if he remembers him occasionally. He finds as the years come and go that his family does not think farm life such a drudgery after all. Thus his boys take more interest in farm stock and farm work, and somehow the city does not seem near so attractive as it once did.

In view of these facts it is apparent that the motor car, more than any other one thing, will help solve the farmer's problems. The land owning man who is running ahead every year is the man who stays on the farm and buys a motor car. By so doing he keeps on the farm the brain and brawn which belongs to it, and thus finds that the motor car pays.

CONTRADICTIONARY

Prof. W. C. Palmer,

Advocating that the boys and girls stay on the farm, and at the same time teaching city subjects in the rural schools, is contradictory. If the boys and girls are taught one thing, they cannot be expected to want to do something else, even if they are advised to. The diagram illustrates that better than words. The question was asked the boys and girls in 34 schools in Wright County, Iowa—"What they wanted to do." It will be noticed that of the 164 boys, 157 wanted to leave the farm and 163 of the 174 girls wanted to do likewise. After agriculture and home economics had been taught for three years the same question was asked in the same schools. This time 162 of the 174 boys wanted to stay on the farm, and 161 of the 178 girls. This changing an almost unanimous desire of leaving the farm to an almost unanimous desire to stay on the

farm seems almost miraculous; yet it was done thru making a little change in the course of study. It is simple, however, for boys and girls will want to do the things that they have been taught how to do. Their interest will be developed in the

HOME COMING OF THE STUDENT LIFE SPECIAL OF THE NORTH DAKOTA AGRICULTURAL COLLEGE

While the students were enroute to Bismarck, a happy surprise was in store

WHAT THE BOYS AND GIRLS WANTED TO DO BEFORE AGRICULTURE AND HOME ECONOMICS WAS TAUGHT TO LEAVE FARM TO STAY ON FARM

BOYS

157

7

GIRLS

163

11

AFTER AGRICULTURE & HOME ECONOMICS HAD BEEN TAUGHT 3 YEARS

BOYS

12

162

GIRLS

17

161

STATISTICS FROM 34 SCHOOLS IN
WRIGHT COUNTY, IOWA.

EXTENSION DEPARTMENT
N. DAK. AGR. COLLEGE.

things they are taught. They will see more in them than in things they know less about. Again, agriculture and home economics are the things that boys and girls are the most interested in to begin with. They live in an agricultural and home economics laboratory. The knowledge that they have when they come to school is on these two subjects, so that education to be the most effective must begin with what the children know, and not as Professor Minard says—"take them from where they aren't to where they don't want to go." That is what makes the school irksome, that causes the boys, especially, to want to leave schools. The way to keep the boys on the farm is to teach about things they have to deal with. If it is desired to have them leave the farm, then keep agriculture and home economics out of the course of study.

The will to do springs from the knowledge that one can do. One likes to do what one can do well. Doing work that one doesn't understand is drudgery. Most boys must enter productive work. If they are not educated for it, then it will be drudgery. Most girls will manage homes. If they are not taught for it, home-making will be drudgery. So it is in the power of the schools to make either enthusiastic workers or drudges of the boys and girls.

North Dakota Farmer: Fifty Cents a year; 3 yrs., \$1.00. Agents wanted.

for them when President Worst received from Miss Stoner, Head of the Department of Home Economics, a special letter announcing plans for a reception on the evening following their arrival in Fargo, to be given by herself and members of her department in honor of all participants of

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The LAWRENCE-WILLIAMS COMPANY, Cleveland, O.

the Student Life Special, the stay-at-home boosters, students and faculty.

The joys and pleasures of the trip were many at this time when they seemed nearing an end, the announcement that the home-coming would be made an occasion of a reception for all, brought with it a feeling of loyal college spirit and appreciation. The passing of the train from the campus did not indicate the passing out of mind of the part of the student body who were aboard that train. On the other hand, the stay-at-home boosters followed them thruout their journey with good wishes, and the good wishes of Miss Stoner materialized in this surprise of Friday evening which she directed with masterful social ability. She was assisted by the wives of the members of the faculty and Miss Jensen who was in charge of the serving of punch.

At the request of Miss Stoner, short talks were given by those of the Student Life Special. President Worst told of the progress of the College as evidenced by the taking out of a special train manned and equipped by students of the College; of the value of the enterprise both to those who went and those who stayed at home; of the splendid management of affairs thruout the trip; of the impossibility of taking all on one train; and of the help and loyal support of the stay-at-home boosters.

Some of the students who went were next called upon to tell of the trip. The statements of all were to the effect that they had a fine time, that they were splendidly received thruout the state, and that great interest was manifested wherever they stopped.

The occasion of the reception gave an opportunity for everybody to hear reports from those of the Student Life Special, in which all had an interest.

When it was definitely made known that the Special Train was to be taken out, no effort was spared by the Head of the Department of Home Economics to plan in detail the work which represented Home Economics. Exhibits of bread, cakes and candies were prepared under the direction of Miss Stoner by the students, to whom much credit is due for the preparation of exhibits and supplies which accompanied the Student Life Special. Senior representative girls of the Department were in charge of the exhibits on the train and they were prepared to give information regarding the exhibits and the the Department of Home Economics at the Agricultural College.

Menus for the meals on the dining-car were also planned before starting on the trip. These menus were carried out in so far as possible. Nothing was left undone by the Department of Home Economics which was possible to be done by them in the time allotted for the preparation. Dresses and hats from the Domestic Art Department which were made in the De-

partment and worn by the girls on the trip were also a part of the Home Economics exhibit.

These articles and products gave to those visiting the train some knowledge of what the College is doing for the girls of North Dakota.

The work of the commissary department of the dining-car was also planned for and was made a part of the young women's class work. The students received valuable training in the preparation of food for large numbers, since some of the articles of food on the train were prepared by the students as class work. This feature of service on the train was in charge of one of the senior home economics students.

Miss Stoner's work at all times indicates a harmonious adjustment of the social and intellectual training of the individual. All this gives to the student an appreciation of the finer side of life and brings with it a better understanding of the Art of Right Living.

Cloths wrung out of hot water are such a help in the relieving of pain that this method of supplying them without the usual scalded hands will be welcome: Wring two cloths out of warm water and place them in the double-boiler and cover. Set the inner kettle in the boiling water and the cloths will soon be hot. Take out one and apply to the patient and the other will be kept hot until needed to replace the first one. In this way one cloth is always being heated and is ready when wanted without the hands being put in hot water. Should they become a little dry, sprinkle them with a little warm water. A spirit lamp or a small oil-heater may do service here.

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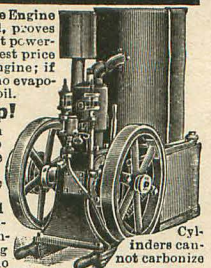
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Seasonable Receipts

Maple Sugar Frosting

Dissolve one-half pound broken maple sugar in three tablespoons water and boil until it hairs. Pour it gradually over beaten whites of two eggs. Beat until thick enough to spread.

Quick-Fried Cakes

Two eggs, one cup sugar, one cup milk, four tablespoons melted lard or butter, and three scant cups flour sifted with two teaspoons baking powder, one level teaspoon alspice and one-half teaspoon salt. Drop spoonfuls of this batter (about the size of a walnut) into hot lard and fry the same as other fried cakes, being careful not to make them too large, nor have the lard too hot or they may not bake thru. Half the receipt may be made as they are nicer when fresh and crisp.

A Delicious Orange Pie

Mix the grated rind and juice of two oranges, the juice of one lemon, two tablespoons cornstarch and two cups sugar. Add two cups boiling water and one heaping tablespoon butter. Boil this, then pour it over the well beaten yolks of four or five eggs. Pour into crusts already baked and cover with a meringue made of whites of the eggs and about one half cup sugar. Brown in the oven. Makes two large pies.

Peach Short Cake

Bake rich short-cake dough in two layers

spreading butter between so that they will separate easily. Drain the syrup from canned peaches (sliced preferred) and spread them, mixed with a little sugar, between the layers of the short-cake. Use the syrup with cream added to pour over the short-cake when serving it.

Peach Cottage Pudding

Make a batter of the following: one-half cup sugar, three tablespoons melted butter, one beaten egg, one cup milk, two cups flour and one and one-half teaspoons baking powder. Stir in two cups sliced peaches (drain the syrup from canned sliced peaches) and bake. Serve with hard sauce.

Hard Sauce: Cream one-half cup butter add white of one egg and add pulverized sugar until it is thick enough to pile like ice cream on a dish. Flavor.

Mock Mince Pie

One cupful each of sugar, bread crumbs and water, one-half cupful vinegar, one tablespoonful butter, one teaspoonful each of cloves and cinnamon, one cupful raisins; boiled. This makes two pies.

Oatmeal Cookies

Two and one-half cupfuls flour, two cupfuls Quaker Oats, two eggs, one cupful sugar, one cupful shortening (half butter, half lard), one teaspoonful salt, one teaspoonful cinnamon, one teaspoonful soda in flour, one-half cupful coffee, one cupful raisins, one-half cupful currants. When well mixed drop on tins and bake. Will keep a month in a covered jar.

California Cookies

One cupful sugar, one cupful molasses, one cupful water, one-half cupful butter, two teaspoonfuls soda, five cupfuls flour, one teaspoonful each of cloves, nutmeg, cinnamon, one cupful currants. Drop small pieces of dough on buttered tins and bake.

To Cook Dried Berries

In cooking the dried berries, such as black or red raspberries or the Loganberries, do not let them boil, if you wish them to resemble more nearly the fresh fruit. Pick over and wash them in cold water, then pour over boiling water to cover and allow for swelling. Let them sit on the back of the stove until they are filled out plump, which should only require a few moments. Add the sugar and let them remain on the stove just long enough to dissolve it thoroly.

The black raspberries or the Loganberries make delicious steamed pudding or

cottage pudding by stirring about a cupful of the drained berries into the batter and using the juice, thickened with a little butter and flour rubbed together for a sauce.

If dried peaches are soaked over night most of the skins can be easily removed. They are then much more palatable and are also very nice chopped fine and boiled down to make a jam.

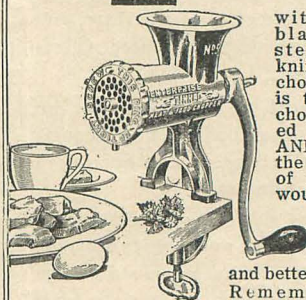
When frying food in deep fat avoid unnecessary moisture, wipe fish thoroly; heat food slightly beforehand, if possible so as not to cool the fat. Foods already cooked, such as croquettes, require more heat. Drop a bit of bread in the fat and for cooked foods it should brown while you count forty, while for doughnuts the fat should be of a heat to require the counting of sixty to brown the bread.

Three or four thicknesses of old stocking legs quilted coarsely together make the nicest kind of stove holders.

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Making appetizing, wholesome dishes from "left-overs"—particularly meat—is the everyday purpose for which you use a chopper. You can have these bits of meat cleanly chopped or just mangled—it all depends on the chopper you use. The

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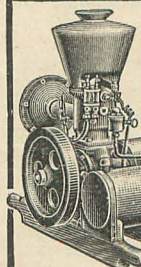
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Precious Metals Ground in Linseed Oil

THAT'S what Horse Shoe Brand House Paint is: every gallon of it is strictly pure lead and zinc ground in strictly pure linseed oil.

It's a fact; and when your house puts on a coat of Mound City House Paint it fronts the world, so to speak, in cream, or gray, or tan, or white armor plate.

Strictly pure zinc makes up what lead lacks: strengthens where lead is weak—is harder—whiter—more clear—and beautiful.

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Zinc takes more oil to the pound than lead, and, because "oil is the life of paint" lead plus zinc makes the best paint known.

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By R. E. Olds, Designer

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To me it's an old, old story. Perhaps it is new to you.

A Lifetime

I was one of the world's first builders of gas engines. Long before the days of automobiles, the Olds Gas Engines were known half the world over. And they are today.

It has taken a lifetime to develop an engine like the one in Reo the Fifth. And even my rivals concede it to be one of the great engines of the world.

My catalog states all the details about it. I won't bother with them here. But the fame of this engine is based on four things:

- Its unusual power—
- Its enduring silence—
- Its remarkable endurance—
- Its ease of adjustment.

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We avoid trouble for you by putting each engine to five radical tests in our factory.

Each is run for 10 hours with outside power, then another 10 hours with its own power. Then we take it apart and inspect it.

Then it is made to run a blower, and tested at various speeds. Then it runs an absorption dynamometer, as a measure of its power. Then, in the finished car, we give it the hardest sort of road test.

These tests require 48 hours. But thousands of these engines, run for years and years, are still in prime condition.

We use on this engine, to save ignition troubles, a \$75 magneto. And we doubly heat our carburetor, to deal with any gasoline.

So Everywhere

In every part of this car we use the same precautions.

The steel is twice analyzed.

The gears are tested to stand 75,000

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We use 190 drop forgings.

We use 15 roller bearings.

The tires are 34x4.

Each body gets 17 coats.

When you get a car built like Reo the Fifth there is very small cost of upkeep.

Unique Control

We use in this car the only center control which is simple and out of the way

All the gear shifting is done by moving a small rod only three inches in each of four directions.

There are no levers, side or center, so the front is clear. Both brakes are operated by foot pedals.

And in this car you find the left side drive, as in the finest cars this year.

Write for our catalog and we'll direct you to the nearest showroom.

R. M. Owen & Co., General Sales Agents for Reo Motor Car Co., Lansing, Mich.

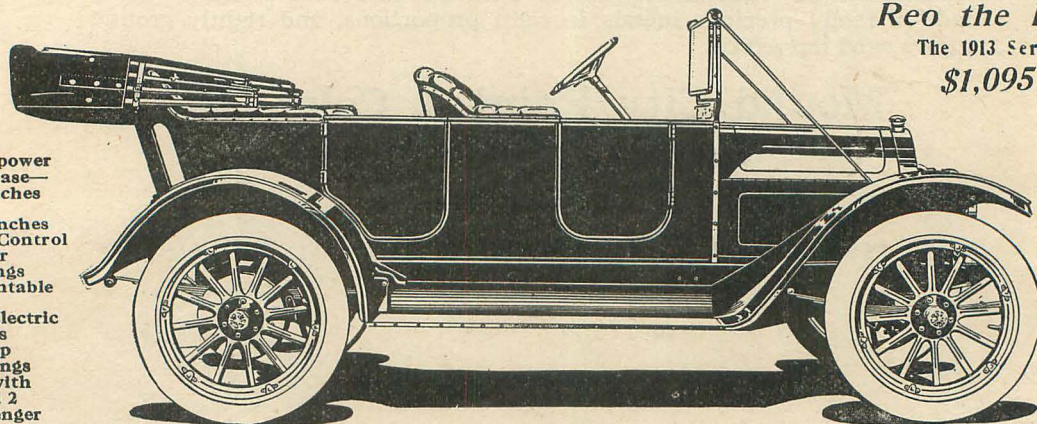
Canadian Factory, St. Catharines, Ontario

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